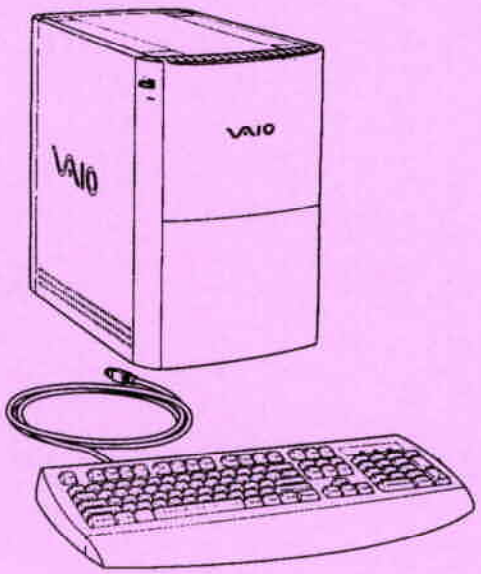
PCV-100/120

SERVICE MANUAL

US Model



VAIO

Specifications

del Number	PCV-100	PCV-120
Processor	166 MHz Pentium with MMX	200 MHz Pentium with MMX
Hard Disk Drive	2.5 G	3.8 G
Standard RAM	32 MB EDO RAM, expandable to 128 MB	
L2 Cache Memory	256 KB Pipeline Burst SRAM	
Video RAM	2MB EDO Video RAM	
MPEG	"Sony Tuned" MPEG1 Digital Video Playback supports full-screen display	
Graphics	3-D acceleration	
Sound Capabilities	3-D SRS surround sound 16-bit audio FM synthesis Wavetable synthesis MPC-3 compliant	
Diskette Drive	3.5" 1.44 MB MFDD	
CD-ROM Drive	16X CD-ROM drive	
CD-ROM Laser	Semiconductor Laser AlGaAs 785 nm + 25 nm/ -15 nm wave length 0.3 mW (max) output power 53.5 (typ) degrees beam divergence	
Modem	33.6 Kbps DSVD modem 14.4 Kbps fax	
Telecommunication Capabilities	Full duplex speakerphone with echo cancellation Answering machine functionality with personal mailboxes Fax send/receive	

Expansion Capabilities	Two PCI slots Two ISA slots One shared PCI/ISA slot MIDI/game port Two USB ports Two drive bays Video out S-video out
Supplied Accessories	Keyboard Mouse RJ-11 Phone Cable Power Cord Video Cable S-Video Cable Audio Splitter
Service	One-year on-site standard
Limited Warranty	One-year parts/labor standard
Power Requirements	200 watts maximum
Dimensions	9" (w) X 14 7/8" (h) X 18" (d) (226 X 376 X 455 mm)
Weight	26.5 lbs (12 kg)
Operating Temperature	50° F to 95° F (+10° C to 35° C)

PERSONAL COMPUTER VAIO

SONY®

9-974-454-11

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Service and Inspection Precautions

1. Obey precautionary markings and instructions

Labels and stamps on the cabinet, chassis, and components identify areas requiring special precautions. Be sure to observe these precautions, as well as all precautions listed in the operating manual and other associated documents.

2. Use designated parts only

The sets components possess important safety characteristics, such as noncombustibility and the ability to tolerate large voltages. Be sure that replacement parts posses the same safety characteristics as the originals. Also remember that the ⚠ mark, which appears in circuit diagrams and parts lists, denotes components that have particularly important safety functions; be extra sure to use only the designated components.

3. Always follow the original design when mounting parts and routing wires.

The original layout includes various safety features, such as inclusion of insulating materials (tubes and tape) and the mounting of parts above the printer board. In addition, internal wiring has been routed and clamped so as to keep it away from hot or high-voltage parts. When mounting parts or routing wires, therefore, be sure to duplicate the original layout

4. Inspect after completing service

After servicing, inspect to make sure that all screws, components, and wiring have been returned to their original condition. Also check the area around the repair location to ensure that repair work has caused no damage and confirm safety.

5. When replacing chip components...

Never reuse components. Also remember that the negative side of tantalum capacitors is easily damaged by heat.

6. When handling flexible point boards...

- The temperature of the soldering-iron temp shoud be about 270°C.
- Do not apply the tip more than three times to the same pattern.
- Handle patterns with care; never apply force.

Caution: Remember that hard disk drives are easily damaged by vibration. Always handle with care.

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1-1. About Your Sony PC

(Copied from "About Your Sony PC (3-859-399-11)".)

About Your Sony PC

PCV-100/120

SONY

NOTICE

This product contains software owned by Sony and licensed by third parties. Use of such software is subject to the terms and conditions of license agreements enclosed with this product. Some of the software may not be transported or used outside the United States. Software specifications are subject to change without notice and may not necessarily be identical to current retail versions.

Updates and additions to software may require an additional charge. Subscriptions to online service providers may require a fee and credit card information. Financial services may require prior arrangements with participating financial institutions. Some software titles are trial versions.

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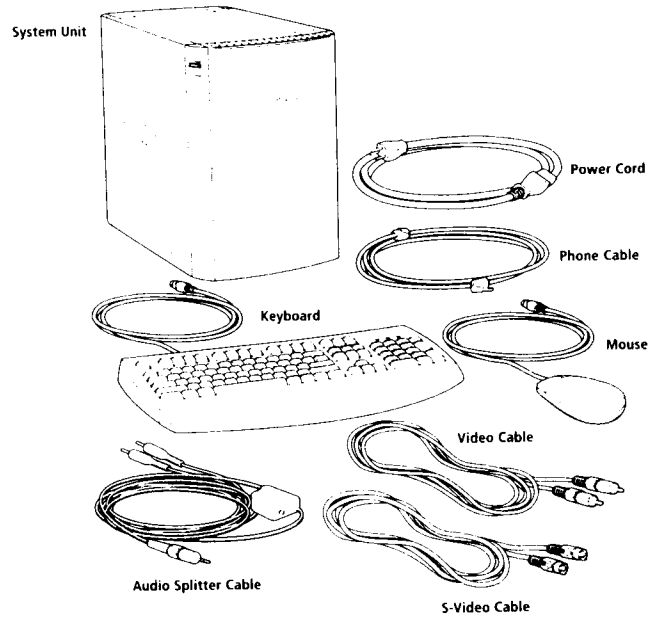
About the Contents of Your Sony PC

Your Sony PC includes the following items:

PC and Supplied Accessories



Manuals

- **About Your Sony PC** provides descriptions of your preinstalled software titles and the specifications for your Sony PC.
- **Sony PC User Guide** describes how to set up your PC, use VAIO™ Space (the Sony desktop), use the Sony A/V Suite, find help, upgrade your PC, and accomplish basic computer tasks.
- **Introducing Windows® 95** explains how to use the basic features of the Windows 95 operating system.
- **Introducing Microsoft® Phone** teaches you how to use the Microsoft Phone speakerphone, answering machine, fax, and e-mail software.
- **3D Movie Maker** shows you how to create movies with the 3D Movie Maker application.
- The **Sony Video Phone** manual shows you how to get started using the receive-only version of Video Phone.

Note

Your PC also includes a comprehensive hardware reference guide in the Sony PC Help Library on your hard disk drive. You can access this library from the Windows 95 Start menu.

Other

- Setting up your Sony PC (poster)
- Packet containing Sony warranty information and special product offers

CD Album

The CD album contains the Microsoft software license agreement, Sony end-user license agreement, and the following CDs:

- The American Heritage® Talking Dictionary
- Billboard® Music Guide
- Blockbuster Entertainment® Video Guide to Movies & Videos
- Cartopedia: The Ultimate World Reference Atlas
- Compton's Interactive Encyclopedia™
- The Family Doctor
- LAUNCH™
- MechWarrior®2 (Enhanced Edition)
- Microsoft® 3D Movie Maker
- Microsoft Bookshelf®
- Microsoft Encarta® 96 Encyclopedia
- Microsoft Windows® 95 Companion CD
- MGI PhotoSuite™
- Quicken® Special Edition
- Reader Rabbit 1®
- Recovery CD
- Sony Welcome CD
- The Third Dimension™
- Video CD-ROM Sampler
- WipeOut™ (Enhanced Edition)

About the Software on Your Sony PC

Your Sony PC is ready to help you work, play, learn, and communicate as soon as you turn it on. This section gives you an overview of the activities you can perform with your software titles.

For general information, call Sony Electronics at 888-4SONY-PC (888-476-6972).

In the Work Center

Quicken® Special Edition

Intuit, Inc.

Quicken Special Edition helps you manage your personal and small business finances. The software resembles your checkbook, so it's easy to learn and easy to use. You can print checks, reconcile your bank account, and complete bank transactions from home. Quicken Special Edition's charts and graphs show you account balances and where your money goes. For questions and technical assistance, call Quicken at 505-896-7222, M – F, 6 AM – 6 PM MT.

Investor Insight® (trial edition)

Intuit, Inc.

Investor Insight is a comprehensive, easy-to-use investment information service available for personal investors. It combines a full suite of investment analysis features—charting, company news, research reports, and personalized reports—with its own online service. With the click of a button, Investor Insight downloads late-breaking Wall Street information related to your stocks and mutual funds. For technical assistance, call Intuit at 708-585-8500, M – F, 7 AM – 11 PM CT, S – S, 8 AM – 5 PM CT.

Microsoft Works

Microsoft Corporation

Microsoft Works is a suite of productivity tools that includes a word processor, spreadsheet, database, and drawing and communications software. You can use these tools to create professional documents quickly and easily. For questions and technical assistance, call Sony Electronics at 888-4SONY-PC (888-476-6972), 7 days a week, 24 hours a day.

Microsoft Money

Microsoft Corporation

Display the status of your checking and savings accounts or check your loan and credit card balances. The software reminds you when it's time to pay a monthly bill and offers you the option to print your own checks or, if you make arrangements with your financial institution, pay the bills electronically. You can also prepare budgets and plan your financial future. Wizards help you set up new accounts, and online banking enables you to bank from home. For questions and technical assistance, call Sony Electronics at 888-4SONY-PC (888-476-6972), 7 days a week, 24 hours a day.

Sidekick® 95 (trial edition)

Starfish Software

A personal organizer that keeps you on top of your schedule, client contacts, expenses, receipts, correspondence, telephone calls, and world time. Sidekick prints pages that fit into popular organizers from companies such as Day-Timer™, Day Runner®, Franklin®, and Filofax®. For questions and technical assistance, call Starfish Software at 900-555-1010 (charges appear on your phone bill) or 800-953-9995 (charges appear on your credit card), M – F, 6 AM – 5 PM PT.

PC411® Telephone Directory

PC411, Inc.

PC411 is your online North American telephone book and a complete source of 411 information: over 108 million names, telephone numbers, addresses, and ZIP codes for all published business and residential phone book listings in the United States and Canada. Includes AT&T's 800 Directory. Search the entire country any time you need. Your first five searches are free. Charges apply for additional searches. For questions and technical assistance, call PC411 at 310-645-1114, M – F, 8 AM – 5 PM PT.

MGI PhotoSuite™

MGI Software Corp.

MGI PhotoSuite is the easiest way to edit, capture, and transform your photos on your PC. It includes 30 Special Effects, Photo Lens Kit, Image Capture, Multimedia Slide Show, Photo Albums, and Internet Helper. Capture photos using any scanner or digital camera with TWAIN support or use your Internet browser. Create professional results and print with any color printer or post the photos on your web site. Create greeting cards, calendars, flyers, and presentations and use your photo creation in other Windows applications. A bonus stock library includes hundreds of photos, sound effects, and animation clips. For questions and technical assistance, call MGI Software at 888-MIG-SOFT (888-644-7638) M – F, 9 AM – 5 PM ET.

SOS Oil Change

CyberMedia Inc.

SOS (Sony Online Support) Oil Change™ software is a useful companion to SOS. Using the Internet, it provides the latest device drivers, software fixes and updates selected by Sony for the software titles included with your Sony PC. SOS Oil Change scans your PC to identify software applications and their versions. It then logs on to the Internet, compares your software configuration against the Sony database, and notifies you of the software fixes and updates available for your PC. For each fix and update, it provides an explanation. After selecting the software fixes and updates you require, SOS Oil Change downloads, uncompresses and installs the selected items. For questions and technical assistance, call Sony Electronics at 888-4SONY-PC (888-476-6972), 7 days a week, 24 hours a day.

EasyPhoto™ Phone

Storm Technology, Inc.

EasyPhoto Phone is a fun new way to share photos with your friends, family, and colleagues using your Sony PC. Just drag and drop any scanned photograph, Photo CD image, or Internet graphic (JPEG and BMP) into EasyPhoto Phone and they're automatically sent. Then, using your Sony PC's DSVD modem, you can simultaneously chat while viewing photos, just as if you were sitting in the same room. (Second party must also have a DSVD modem.) Includes software that makes it easy to store, organize, enhance, and use photos on your PC. For questions and technical assistance, call Storm Technology at 888-GETEASY (888-438-3279) M – F, 7 AM – 5 PM PT.

In the Reference Library

Microsoft Encarta® 96 Encyclopedia

Microsoft Corporation

With more than 26,000 articles and nearly 300,000 links, this multimedia encyclopedia provides extensive information for school, work, and personal interests. Conduct research with a timeline that spans 15 million years. The Yearbook Builder provides current online updates. This software features "Sony Tuned" MPEG1 Digital Video. For questions and technical assistance, call Sony Electronics at 888-4SONY-PC (888-476-6972), 7 days a week, 24 hours a day.

Microsoft Bookshelf

Microsoft Corporation

Microsoft Bookshelf provides quick and easy access to a world of useful and interesting information. Find exactly the information you're looking for with one-click access to nine best-selling reference works while using any software program. For questions and technical assistance, call Sony Electronics at 888-4SONY-PC (888-476-6972), 7 days a week, 24 hours a day.

Compton's Interactive Encyclopedia™

SoftKey® International Inc.

This 26-volume encyclopedia includes more than 35,000 articles, 8,000 pictures, and 100 full-motion videos. Listen to more than 15 hours of sounds, including famous speeches and recordings of historical events. The encyclopedia is valuable for students, families, and professionals. This software features "Sony Tuned" MPEG1 Digital Video. For questions and technical assistance, call SoftKey at 423-670-2020, M – F, 8 AM – 9 PM ET.

The American Heritage® Talking Dictionary

SoftKey International Inc.

More than an ordinary dictionary, this multimedia dictionary provides the correct pronunciation of 72,000 words. Use it to find full definitions of nearly 200,000 words. Photos, illustrations, and videos clarify the meanings of many words. This edition also includes a thesaurus with more than a million synonyms, the Dictionary of Cultural Literacy, and a special Quick View definition window. This software features "Sony Tuned" MPEG1 Digital Video. For questions and technical assistance, call SoftKey at 423-670-2020, M – F, 8 AM – 9 PM ET.

Cartopedia: The Ultimate World Reference Atlas

DK Multimedia

Cartopedia is an in-depth guide to the geographical world. This worldwide atlas includes detailed maps and up-to-date background information. A wealth of statistical data enables you to compare and contrast world statistics. For questions and technical assistance, call DK Multimedia at 800-356-6575, M – F, 9 AM – 7 PM ET.

The Family Doctor

Creative Multimedia™

The Family Doctor is a resource for medical information. This edition includes descriptions of more than 7,600 drug interactions and side-effects, explanations of first-aid techniques, and classifications of common symptoms and diagnoses. The software also covers alternative medicines, elements of human anatomy, and answers to more than 2,300 commonly asked medical questions. The material contained within The Family Doctor is for information only and should not replace the advice of your personal physician. This software features "Sony Tuned" MPEG1 Digital Video. For questions and technical assistance, call Creative Multimedia at 900-438-8324 (charges appear on your phone bill), M – F, 8 AM – 5 PM PT.

Blockbuster Entertainment® Video Guide to Movies & Videos

Creative Multimedia

Find out about movies before you watch them. This software includes more than 22,000 reviews, 5,500 photographs, 40 video clips, StarLinks™ interactive movie game, and 10,000 biographies and videographies. The Blockbuster Video Guide also offers free monthly electronic updates with reviews of the latest movie and video releases. This software features "Sony Tuned" MPEG1 Digital Video. For questions and technical assistance, call Creative Multimedia at 900-438-8324 (charges appear on your phone bill), M – F, 8 AM – 5 PM PT.

Billboard® Music Guide

Creative Multimedia

The Billboard® Music Guide, with more than 60,000 albums in each of the major music genres, helps you find the music you want to own. This software includes more than 1,000 audio "sampling" clips, 38,000 reviews from *Billboard® Magazine* and the *All Music Guide®*, graphics from more than 3,000 album covers, biographies, artist and band photos, credits, and Internet access. This software features "Sony Tuned" MPEG1 Digital Video. For questions and technical assistance, call Creative Multimedia at 900-438-8324 (charges will appear on your phone bill), M – F, 8 AM – 5 PM PT.

LAUNCH

2Way Media, Inc.

LAUNCH, the bi-monthly entertainment CD-ROM. See and hear exclusive performances and interactive interviews from today's top musical artists. View an exclusive "Sony Tuned" MPEG1 Digital Video by Crash Test Dummies. Enjoy behind-the-scenes interviews with movie stars and filmmakers. Discover original animated short films, plus game reviews and playable game demos. For questions and technical assistance, call 2Way Media at 310-319-5320, M – F, 10 AM – 8 PM PT.

Video CD-ROM Sampler

Sony Pictures Entertainment

The Video CD Sampler presents trailers from recent movies now available on home videos and distributed by Columbia Tristar Home Video*. Also includes trailers from current popular television programs distributed by Columbia Tristar Television Distribution™. This software features "Sony Tuned" MPEG1 Digital Video. For questions and technical assistance, call Sony Electronics at 888-4SONY-PC (888-476-6972), 7 days a week, 24 hours a day.

Sony PC Help Library

Sony Electronics

Sony PC Help Library gives you access to online user guides and help files for the software on your Sony PC. For questions and technical assistance, call Sony Electronics at 888-4SONY-PC (888-476-6972), 7 days a week, 24 hours a day.

In the Game Arcade

WipeOut™
PSYGNOSIS LTD.
This game is set at a fictional racetrack of the future where there is zero gravity. Use the controls to navigate hairpin turns, make hang-ten drops, and initiate jumps. Your goal is to stay in the lead and defend your vehicle against other drivers. This enhanced edition includes ATI tuning. For questions and technical assistance, call PSYGNOSIS at 415-655-5683, M – F, 9 AM – 5 PM PT.

MechWarrior® 2
Activision®, Inc.
Combining sophisticated simulation gameplay with vivid 3-D graphics, this action-combat game puts you in the cockpit of one of 15 'Mechs®, each customized with a variety of lethal weapons. Players battle across a number of planetary terrains, ranging from urban landscapes to icefields to deserts. The game is optimized for the ATI 3D RAGE accelerator chip, offering players higher polygon count real-time 3-D graphics with 65,000 colors. For questions and technical assistance, call Activision at 310-479-5644, M – F, 9 AM – 5 PM PT.

Dr. Black Jack (Best of Microsoft Entertainment Pack)
Microsoft Corporation
This classic casino game is a Windows favorite. Test your card-sense and luck as you try to reach 21. For questions and technical assistance, call Sony Electronics at 888-4SONY-PC (888-476-6972), 7 days a week, 24 hours a day.

FreeCell (Best of Microsoft Entertainment Pack)
Microsoft Corporation
In FreeCell, all the cards are on the table, but it still takes skill and practice to win. For questions and technical assistance, call Sony Electronics at 888-4SONY-PC (888-476-6972), 7 days a week, 24 hours a day.

Golf (Best of Microsoft Entertainment Pack)
Microsoft Corporation
You win this challenging solitaire game by matching the suits. For questions and technical assistance, call Sony Electronics at 888-4SONY-PC (888-476-6972), 7 days a week, 24 hours a day.

TriPeaks (Best of Microsoft Entertainment Pack)
Microsoft Corporation
TriPeaks is a single-player card game. Your goal is to earn a higher score than anyone else who's ever played on your PC. Your success will depend on your perseverance, memory, and luck. For questions and technical assistance, call Sony Electronics at 888-4SONY-PC (888-476-6972), 7 days a week, 24 hours a day.

Tut's Tomb (Best of Microsoft Entertainment Pack)
Microsoft Corporation
Your lucky number is 13 in this solitaire card game. For questions and technical assistance, call Sony Electronics at 888-4SONY-PC (888-476-6972), 7 days a week, 24 hours a day.

Taipei (Best of Microsoft Entertainment Pack)
Microsoft Corporation
Taipei is an ancient game from the Orient. Map your strategy to match all the tiles. For questions and technical assistance, call Sony Electronics at 888-4SONY-PC (888-476-6972), 7 days a week, 24 hours a day.

TetraVex (Best of Microsoft Entertainment Pack)
Microsoft Corporation
Place your chips wisely in this four-sided game. Match the numbers as you complete the square. For questions and technical assistance, call Sony Electronics at 888-4SONY-PC (888-476-6972), 7 days a week, 24 hours a day.

Tetris™ (Best of Microsoft Entertainment Pack)
Microsoft Corporation
Tetris is the international favorite from Russia. Maneuver the blocks into rows to win. For questions and technical assistance, call Sony Electronics at 888-4SONY-PC (888-476-6972), 7 days a week, 24 hours a day.

JezzBall (Best of Microsoft Entertainment Pack)
Microsoft Corporation
Trap the balls and beat the clock in this arcade-style game. For questions and technical assistance, call Sony Electronics at 888-4SONY-PC (888-476-6972), 7 days a week, 24 hours a day.

Pipe Dream™ (Best of Microsoft Entertainment Pack)
Microsoft Corporation
The Pipe Dream maze game requires quick and decisive actions to avoid getting wet. For questions and technical assistance, call Sony Electronics at 888-4SONY-PC (888-476-6972), 7 days a week, 24 hours a day.

Chip's Challenge® (Best of Microsoft Entertainment Pack)
Microsoft Corporation
Navigate through many levels of puzzles and obstacles, including swamps, teleporters, ice, and killer balls. For questions and technical assistance, call Sony Electronics at 888-4SONY-PC (888-476-6972), 7 days a week, 24 hours a day.

Rodent's Revenge (Best of Microsoft Entertainment Pack)
Microsoft Corporation
In this modern version of cat and mouse, a rodent scurries through a maze to trap the cat and win the cheese. For questions and technical assistance, call Sony Electronics at 888-4SONY-PC (888-476-6972), 7 days a week, 24 hours a day.

SkiFree (Best of Microsoft Entertainment Pack)
Microsoft Corporation
In this game, you steer a skier on a downhill slope. Choose a course—slalom tree-slalom, or freestyle—and see how quickly you can make the skier reach the bottom. For questions and technical assistance, call Sony Electronics at 888-4SONY-PC (888-476-6972), 7 days a week, 24 hours a day.

In Kid's Land

Microsoft 3D Movie Maker
Microsoft Corporation
With Microsoft 3D Movie Maker, children can create 3-D movies with special effects, sounds, music, and spoken dialog. Choose from more than 30 actors, select the costumes, and decide which camera angles to use. McZee™ and Melanie are characters who offer tips and help along the way. For questions and technical assistance, call Sony Electronics at 888-4SONY-PC (888-476-6972), 7 days a week, 24 hours a day.

Reader Rabbit 1 & The Learning Company Sampler
SoftKey International Inc.
Reader Rabbit helps youngsters build their preschool and first-grade reading skills. The rabbit leads children on a tour of the Word Factory, where they play games that use time-tested educational techniques. Animated graphics and lively sounds enhance the experience of recognizing letters and words. For questions and technical assistance, call SoftKey at 423-670-2020, M – F, 8 AM – 9 PM ET.

The Third Dimension
Davidson and Associates
The Third Dimension is a 3-D creativity tool/toy that allows kids and adults to build and manipulate spectacular 3-D animated environments. Dozens of powerful but easy-to-use tools allow creations to be imported, rotated, reset, zoomed, moved, sized, stretched, colored, and animated. The Third Dimension makes use of MMX™ technology to enhance speed and sound, and to create photorealistic displays. Objects and environments can be printed in black and white or color. For questions and technical assistance, call Davidson at 310-793-0060, M – F, 7 AM – 6 PM PT.

In the A/V Wall

CD Player

Use the CD Player to listen to audio CDs in your CD-ROM drive while you use your computer. You can play specific tracks, shuffle tracks in random order, or create a playlist of selected tracks. Software created by Voyetra™ Technologies. For questions and technical assistance, call Sony Electronics at 888-4SONY-PC (888-476-6972), 7 days a week, 24 hours a day.

WAV Player

Many of the sounds you hear on your Sony PC are WAV files. The WAV Player lets you play WAV files as well as create playlists of your favorite sounds and save the sequences to hear later. Software created by Voyetra Technologies. For questions and technical assistance, call Sony Electronics at 888-4SONY-PC (888-476-6972), 7 days a week, 24 hours a day.

MIDI Player

Connect a MIDI instrument to the built-in MIDI connector and you can record your own MIDI files. The MIDI Player also makes it easy to play existing MIDI music files and to make playlists for future listening sessions. Software created by Voyetra Technologies. For questions and technical assistance, call Sony Electronics at 888-4SONY-PC (888-476-6972), 7 days a week, 24 hours a day.

Audio Mixer

With the Audio Mixer, you can adjust the volume for all the sound sources on your Sony PC. Use the Audio Mixer to make the audio in your multimedia software and audio CDs sound just the way you like. The Audio Mixer also controls auxiliary devices and microphone input. Software created by Voyetra Technologies. For questions and technical assistance, call Sony Electronics at 888-4SONY-PC (888-476-6972), 7 days a week, 24 hours a day.

Video File Player

Watch movies on your Sony PC with the Video File Player. This video player functions like a VCR and plays AVI and MPEG1 video format files. You can make playlists of video files and save the lists for future viewing. Software created by Voyetra Technologies. For questions and technical assistance, call Sony Electronics at 888-4SONY-PC (888-476-6972), 7 days a week, 24 hours a day.

Video CD Player

The Video CD Player in your Sony PC enables you to play Video CDs. Use it also as a Karaoke player, to sing along with Karaoke CDs. Or watch music videos on enhanced CDs and access bonus information about your favorite musicians. Software created by CompCore Multimedia, Inc. For questions and technical assistance, call Sony Electronics at 888-4SONY-PC (888-476-6972), 7 days a week, 24 hours a day.

Microsoft Phone

Microsoft Corporation

Turn your Sony PC into a speakerphone. Microsoft Phone transforms your modem into a comprehensive, centralized communications center. Store all e-mail, voice, and fax messages in a single inbox. Let callers hear announcements, leave messages, or receive faxes by pressing their phone keys. Use text-to-speech technology to read e-mail messages aloud over the phone. Microsoft Phone uses speech-recognition technology to enable you to store frequently used numbers in memory and to dial by simply pronouncing a name. For questions and technical assistance, call Sony Electronics at 888-4SONY-PC (888-476-6972), 7 days a week, 24 hours a day.

AudioView™

With AudioView you can record your own sounds, add prerecorded sounds, and change or edit the existing sounds on your Sony PC. Familiar copy, cut, and paste commands make it easy to get started. You can also perform more sophisticated functions such as mix pasting, combining several sounds, and adjusting playback volume. Software created by Voyetra Technologies. For questions and technical assistance, call Sony Electronics at 888-4SONY-PC (888-476-6972), 7 days a week, 24 hours a day.

Sony Video Phone (Receive Only)

The receive-only version of Sony Video Phone with Intel ProShare™ Technology allows you to talk to someone over the phone and to see that person while you talk. To do this, the connected party's computer must have Video Phone software (or a compatible product) and a video camera option. The "voice call first" capability allows you to place or answer the telephone normally and then use your Sony PC to add video to the same call. Another feature allows you to receive a high resolution snapshot during the video call and to store it for future reference. For questions and technical assistance, call Sony Electronics at 888-4SONY PC (888-476-6972), 7 days a week, 24 hours a day.

In Net Space

DeltaPoint™ QuickSite™

DeltaPoint, Inc.

Create and manage your own site on the World Wide Web with QuickSite. Wizards guide you as you design, structure, and organize the pages. Predesigned components give you a head start. When you're ready to publish your World Wide Web site, QuickSite generates the HTML code, builds the links, logs on to your Internet Service Provider, and transfers the files. For questions and technical assistance, call DeltaPoint at 800-446-6955, M – F, 7 AM – 5 PM PT.

Internet Explorer for Windows 95

Microsoft Corporation

Internet Explorer is the Internet browser included with Microsoft Plus! The Setup Wizard configures your computer to connect automatically to the service provider of your choice. A full e-mail package enables you to send and receive mail—including attached files—across the Internet. If you do not currently have a service provider, Internet Explorer connects you to the Internet using MSN, The Microsoft Network™. A complete online tutorial helps new users become comfortable using the Internet. For questions and technical assistance, call Sony Electronics at 888-4SONY-PC (888-476-6972), 7 days a week, 24 hours a day.

Netscape Navigator™ Personal Edition

Netscape Communications

Netscape Navigator gives you easy access to all major Internet resources. Browse ever-growing sources of information on commerce, current events, travel, entertainment, and more. Netscape Navigator is the most widely used World Wide Web browser in the world. For questions and technical assistance, call Sony Electronics at 888-4SONY-PC (888-476-6972), 7 days a week, 24 hours a day.

America Online®

America Online

America Online is an online service with an intuitive interface. Use America Online to stay on top of the news and track your personal finances. Find support for computer products and download software and files. Read issues of your favorite magazines, take online accredited courses, connect with homework tutors, and chat with thousands of members. You also receive your own e-mail account. For technical support, call America Online at 800-827-3338, 7 days a week, 6 AM – 2 PM ET.

CompuServe Interactive (CSi)

CompuServe, Inc.

CSi is the most comprehensive source of organized business and educational information online today. CSi is the perfect choice for those who want access to the vastness of the Internet but don't want to waste time wading through it. Let CSi maximize your time online. For technical support, call CompuServe at 800-848-8990, M – F, 8 AM – 1 PM ET, S – S, 10 AM – 10 PM ET.

Community Place™

Sony Electronics

Community Place is the first VRML-based (Virtual Reality Modeling Language) Internet web browser. VRML is the 3-D equivalent of HTML (HyperText Markup Language), converting the VRML language to a 3-D world of animated shapes, sights, and sounds. Use your mouse to travel between hyperlinked 3-D space objects. Share objects with multiple users. This version of Community Place is automatically invoked by Netscape Navigator when viewing VRML data. For questions and technical assistance, send e-mail to info@sm.sony.co.jp.

Other Software

Sony Welcome CD

Sony Electronics

The Welcome CD provides a peek at the wide variety of applications included with the Sony PC: movies, music, games, magazines, online services, education, finance, and more. Through its graphically rich, interactive environment, the Welcome CD also offers a glimpse of how your PC's sophisticated technology creates a dynamic, multisensory experience. This software features "Sony Tuned" MPEG1 Digital Video. For questions and technical assistance, call Sony Electronics at 888-4SONY-PC (888-476-6972), 7 days a week, 24 hours a day.

Recovery CD

Sony Electronics

You can restore the software titles on your computer if they become corrupted or accidentally erased. The Recovery CD contains a backup copy of the software originally installed on your hard disk drive. **It can be used only to restore the hard disk of the Sony PC you purchased.** See the *Sony PC User Guide* for details. For questions and technical assistance, call Sony Electronics at 888-4SONY-PC (888-476-6972), 7 days a week, 24 hours a day.

Microsoft Plus!

Microsoft Corporation

Microsoft Plus! is a companion to Windows 95. Plus! helps you access the Internet and tune your PC, performing tasks such as disk optimization and error correction. In addition, Plus! provides 12 colorful desktop themes and the 3-D Pinball game. For questions and technical assistance, call Sony Electronics at 888-4SONY-PC (888-476-6972), 7 days a week, 24 hours a day.

Specifications

Model Number	PCV-100	PCV-120
Processor	166 MHz Pentium with MMX technology	200 MHz Pentium with MMX technology
Hard Disk Drive	2.5 GB	3.8 GB
Standard RAM	32 MB EDO RAM, expandable to 128 MB	
L2 Cache Memory	256 KB Pipeline Burst SRAM	
Video RAM	2 MB EDO Video RAM	
MPEG	"Sony Tuned" MPEG1 Digital Video supports full-screen playback	
Graphics	3-D acceleration	
Sound Capabilities	3-D SRS surround sound 16-bit audio FM synthesis Wavetable synthesis MPC-3 compliant	
Diskette Drive	3.5" 1.44 MB MFDD	
CD-ROM Drive	16X CD-ROM drive (max. performance)*	
CD-ROM Laser	Semiconductor Laser Diode AlGaAs 785nm +25nm/-15nm wave length 0.3mw(max) output power 53.5(typ) degrees beam divergence	
Modem	33.6 kbps DSVD modem 14.4 kbps fax	
Telecommunication Capabilities	Full duplex speakerphone with echo cancellation Answering machine functionality with personal mailboxes Fax send/receive	
Expansion Capabilities	Two PCI slots Two ISA slots One shared PCI/ISA slot MIDI/game port Two USB ports† Two drive bays Video OUT S-Video OUT	

Model Number	PCV-100	PCV-120
Supplied Accessories	Keyboard Mouse RJ-11 Phone Cable Power Cord Video Cable S-Video Cable Audio Splitter Cable	
Service	One-year on-site standard[1]	
Limited Warranty	One-year parts/labor standard[1]	
Power Requirements	200 watts maximum	
Dimensions	9" (w) x 14 7/8" (h) x 18" (d) (226 x 376 x 455mm)	
Weight	26.5 lbs. (12kg)	
Operating Temperature	50° F to 95° F (+10° C to 35° C)	

[1] The outer portion of a CD-ROM disk, containing approximately one third of the data on the disk, is read at a speed of 16X (the data transfer standard 1X rate is 150 kbytes/s). The inner portion of the disk is read at a rate that increases from 8X to a maximum of 16X (1200 kbytes/s to 2400 kbytes/s).

[1] USB ports are included to provide state-of-the-art technology. Until USB support is available at the operating system level, you must supply drivers to use USB devices. You can upgrade your operating system to a version that supports USB at the operating system level once a version becomes available.

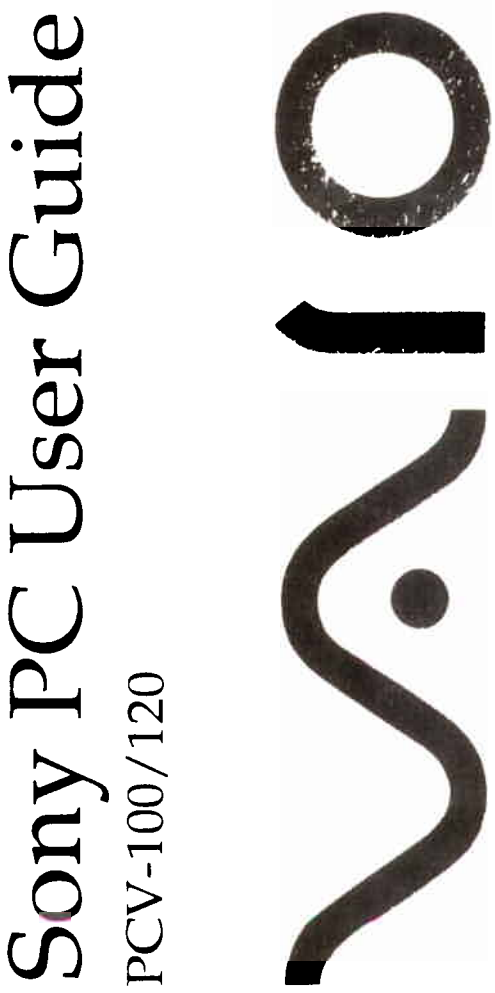
[1] Certain restrictions apply.

Specifications are subject to change without notice.

This product meets the standards of the International ENERGY STAR Program for energy efficiency.

1-2. Sony PC User Guide

(Copied from "Sony PC User Guide (3-859-398-11)".)



SONY®

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Safety Information

Owner's Record

The model number and serial number are located on the back of your Sony PC. Record the serial number in the space provided here. Refer to the model and serial number when you call your Sony Service Center.

Model Number: PCV-100, PCV-120

Serial Number:

WARNING

- To prevent fire or shock hazard, do not expose your Sony PC to rain or moisture.
- Never install modem or telephone wiring during a lightning storm.
- Never install telephone jacks in wet locations unless the jack is specifically designed for wet locations.
- Never touch uninsulated telephone wire or terminals unless the telephone line has been disconnected at the network interface.
- Use caution when installing or modifying telephone lines.
- Avoid using the modem during an electrical storm.
- Do not use the modem or a telephone to report a gas leak in the vicinity of the leak.

Caution

⚠ *The use of optical instruments with this product will increase eye hazard.*

Regulatory Information

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and the receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

You are cautioned that any changes or modifications not expressly approved in this manual could void your authority to operate this equipment.

Only peripherals (computer input/output devices, terminals, printers, etc.) that comply with FCC Class B limits may be attached to this computer product. Operation with non-compliant peripherals is likely to result in interference to radio and television reception.

All cables used to connect peripherals must be shielded and grounded. Operation with cables, connected to peripherals, that are not shielded and grounded, may result in interference to radio and television reception.

FCC Part 68

This equipment complies with Part 68 of the FCC rules. The ringer equivalence number (REN) and the FCC registration number are printed on the modem board. If requested, this information must be supplied to the telephone company.

The REN is used to determine the quantity of devices which may be connected to the phone line. Excessive REN's on the telephone line may result in the devices not ringing in response to an incoming call. In most, but not all areas, the sum of the REN's should not exceed five (5.0). To be certain of the number of devices that may be connected to the line, as determined by the total REN's, contact the telephone company to determine the maximum REN for the calling area.

This modem uses the USOC RJ-11 telephone jack.

If this equipment causes harm to the telephone network, the telephone company will, when practical, notify you in advance that temporary discontinuance of service may be required. If advance notice isn't practical, the telephone company will notify you as soon as possible. Also, you will be advised of your right to file a complaint with the FCC if you believe it is necessary.

The telephone company may make changes in its facilities, equipment, operations or procedures that could affect the operations of the equipment. If this happens, the telephone company will notify you in advance, in order for you to make the necessary modifications in order to maintain uninterrupted service.

If trouble is experienced with this modem, for repair or warranty information, please contact 1-888-4SONY-PC, or write to the Sony Customer Information Center, One Sony Drive, Park Ridge, NJ 07656.

This equipment cannot be used on telephone-company-provided coin service. Connection to Party Line Service is subject to state tariffs.

Repair of the modem should be made only by a Sony Service Center or Sony authorized agent. For the Sony Service Center nearest you, call 1-800-222-SONY (1-800-222-7669).

Telephone Consumer Protection Act of 1991

The Telephone Consumer Protection Act of 1991 makes it unlawful for any person to use a computer or other electronic device to send any message via a telephone facsimile machine unless such message clearly contains, in a margin at the top or bottom of each transmitted page or on the first page of the transmission, the date and time it is sent and an identification of the business, other entity, or individual sending the message, and the telephone number of the sending machine or such business, other entity, or individual.

In order to program this information into your facsimile, see your fax software documentation.

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Welcome

Congratulations on your purchase of the Sony PC. Sony has combined leading-edge technology in audio, video, computing, and communications to provide you with state-of-the-art personal computing.

Here are just some of the features your Sony PC has to offer.

- **Exceptional performance**: Your PC includes a fast Intel® Pentium® processor with MMX™ technology, a 16x CD-ROM drive, and a 33.6 Kbps DSVD (Digital Simultaneous Voice Data) modem.
- **Sony audio and video quality**: High-quality, "Sony Tuned" video, which supports full-screen display, and integrated 3-D sound enable you to take advantage of today's advanced multimedia applications, games, and entertainment software.
- **Preinstalled software titles**: Your Sony PC includes dozens of best-selling software titles, including productivity and reference tools, multimedia applications, and games featuring advanced 3-D graphics.
- **Windows® 95**: Your system includes the latest operating system from Microsoft.
- **VAIO™ Space**: This fun, friendly, and engaging desktop environment, developed especially for the Sony PC, helps you organize and launch applications quickly and efficiently.
- **Sony A/V Suite**: Enjoy all of your PC's audio and visual capabilities with component-like applications that play audio CDs, audio files (MIDI and WAV), Video CDs, and video files.
- **Communications:** Access popular online services, send e-mail, browse the Internet, and use the built-in speakerphone, answering machine, and fax features.
- **Excellent customer support**: Click the SOS icon to access Sony Online Support 24 hours a day, seven days a week. The SOS software enables a support representative to talk to you on the phone, perform remote diagnostics on your PC, and send you updates, all through a single phone call.

About this User Guide

This user guide offers a quick introduction and reference to your Sony PC.

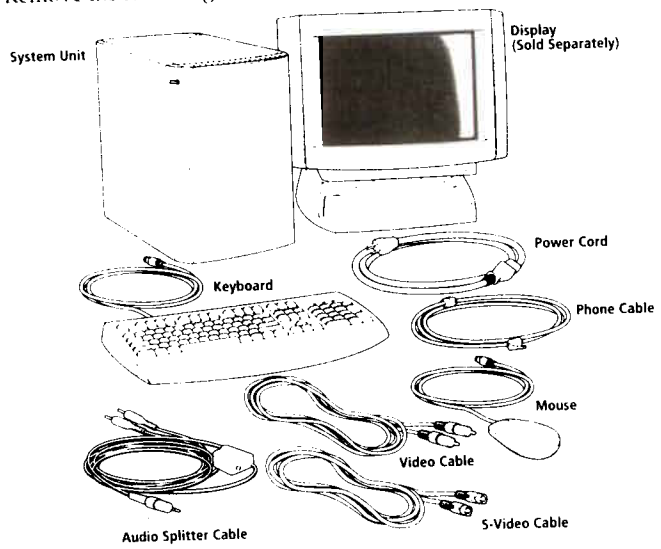
- **Setting Up Your Sony PC** shows you how to connect the standard components of your system—generally in under 15 minutes. This section also explains how to connect additional components you may have, such as a TV, printer, MIDI instrument, joystick, and a digital camera.
- **Getting Started with VAIO Space** offers an in-depth exploration of the VAIO Space environment. It explains the different areas of the screen, how to launch applications, how to switch to Windows 95, how to customize your settings, and more.
- **Introducing the Sony A/V Suite** describes how to use the audio and video components of the Sony A/V Suite. For instance, learn how to listen to your favorite CDs while you work on the computer, or watch videos on your computer screen.
- **Getting Help** explains the support options available to you, shows you how to use the Sony Online Support service, and offers basic troubleshooting tips.
- **Upgrading and Maintaining Your Sony PC** illustrates how to install an add-in card and memory, as well as how to change the lithium battery in your PC.
- **Computer Basics** shows new computer users how to use a mouse, keyboard, CD-ROM drive, and diskette drive.
- **Other Information** provides facts and advice about using your PC.

Setting Up Your Sony PC

Your Sony PC comes with all the software titles preinstalled on your hard disk drive. Just follow these simple steps to connect the cables and turn on the PC, and your Sony PC is ready to use.

Unpacking Your PC

Remove the following items from the box:



You can find the complete list of the items that come with your PC in the *About Your Sony PC* guide.

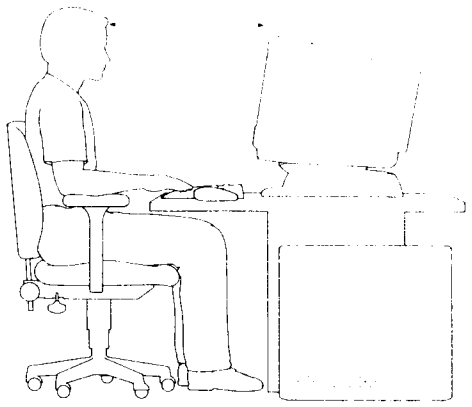
Note

If you purchased a Sony Multimedia Computer Display, it includes built-in speakers and a microphone. For other displays, you'll need separate speakers and a microphone to use the Sony PC's audio features.

Choosing a Location for Your PC

Here are some things to consider when planning your workspace:

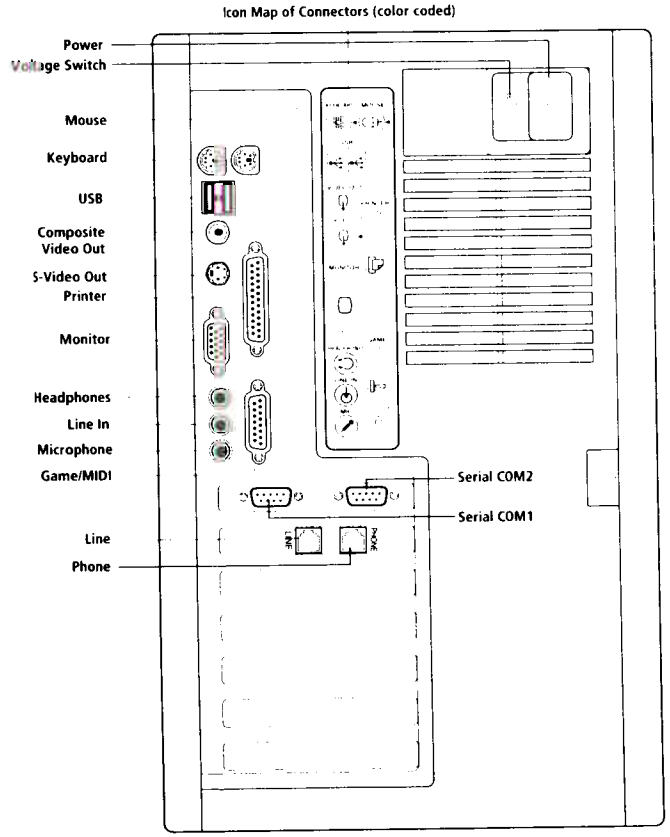
- **Stable work surface**—Use a stable work surface large enough to support the computer, the display, and other equipment.
- **Ventilation**—Leave at least eight inches of space on the left and back sides of your PC to enable proper ventilation.
- **Placement of the keyboard, mouse, and other input devices**—Place your keyboard, mouse, and other input devices so that your arms and hands are in a relaxed, comfortable position. The keyboard should be directly in front of you. Adjust the level of the keyboard so that your lower arms are parallel to the floor. Keep your wrists in a relaxed position when you're using the keyboard—not angled up or down. Use the palmrest only briefly, for resting. While typing, never use the palmrest or rest your hands on the table. Position the mouse at the same level as the keyboard. Hold the mouse with a relaxed hand, and use your whole arm to move it. Take breaks during sessions with your PC. Excessive use of the mouse or a joystick may strain muscles or tendons.



- **Furniture and posture**—Sit in a chair with good back support and armrests. Adjust the level of the chair so your feet are flat on the floor. A footrest may make you more comfortable. Sit in a relaxed, upright posture—avoid slouching forward or leaning far backward.
- **Viewing angle of the display**—Position the display 18 to 26 inches directly in front of you, with the top of the screen at or a little below eye level. Use the display's tilting feature to find the best position. You can reduce eye strain and muscle fatigue by placing the display in the proper position.
- **Lighting**—Choose a location where windows and lights do not create glare and reflection on the display. Use indirect lighting to avoid bright spots on the display. You can also purchase accessories for your display that help reduce glare. Proper lighting adds to your comfort and work effectiveness.

Back Panel Overview

The back panel of your Sony PC contains the connectors where you plug in supplied and optional accessories. The icons on the back panel serve as a map to help you locate the connectors on your PC.



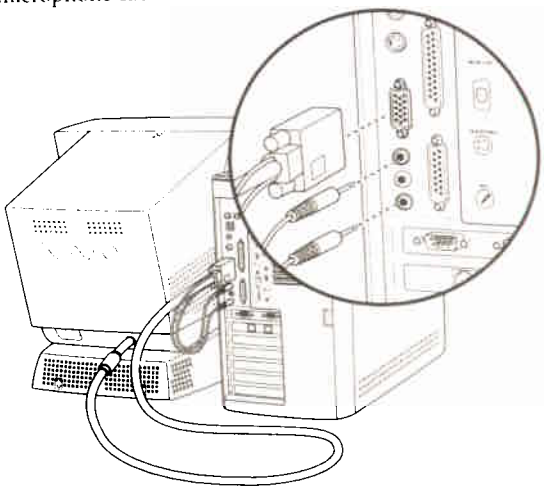
Connecting the Sony Multimedia Computer Display

The Sony Multimedia Computer Display (sold separately) is an integrated audio/video unit with built-in speakers and a microphone. Follow these steps to connect it to your PC.

Note

If you're connecting the Sony PC to a TV or other video component, see "Connecting a TV" on page 13.

1. Use the blue ▢ symbol to locate the **MONITOR** connector. Plug the blue display cable into this connector, and then tighten the two screws to secure the cable.
2. Use the green 🎧 symbol to locate the **HEADPHONES** connector. Plug the green speaker cable into this connector.
3. Use the red 🎤 symbol to locate the **MIC** connector. Plug the red microphone cable into this connector.



Note

See the manual that came with your Sony Multimedia Computer Display for more information on setting up and using the display.

Connecting a Display, Speakers, and a Microphone

If you did not purchase the Sony Multimedia Computer Display, you need speakers and a microphone to use the Sony PC's audio features.

Notes

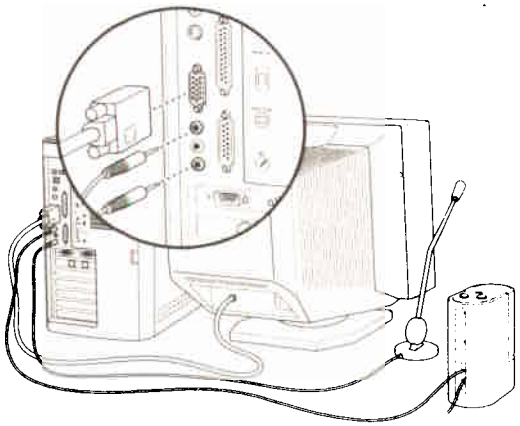
If you're connecting the Sony PC to a TV or other video component, see "Connecting a TV" on page 13.

Make sure your speakers are designed for computer use. See the manuals that come with your display, speakers, and microphone for more information on setting them up and using them.

1 Use the blue ▢ symbol to locate the **MONITOR** connector. Plug the display cable into this connector, and then tighten the two screws to secure the cable.

2 Use the green ∩ symbol to locate the **HEADPHONES** connector. Plug the speaker cable into this connector.

3 Use the red 🎤 to locate the **MIC** connector. Plug the microphone cable into this connector.



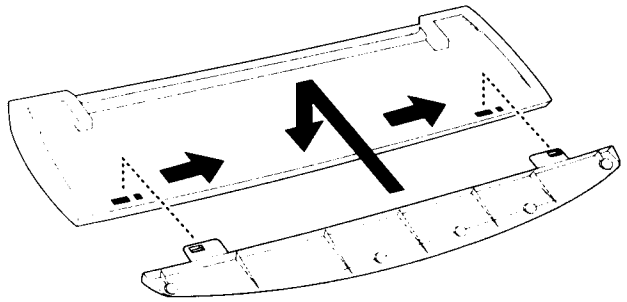
Connecting the Optional Palmrest

Your Sony PC is equipped with an optional palmrest that you can attach to your keyboard. Follow these steps to connect the palmrest.

1 Place the keyboard and palmrest upside down on a flat surface.

2 Insert the latching posts on the palmrest into the openings on the keyboard.

3 Move the palmrest to the right until you feel it snap into place.



Note

Do not keep your wrists on the palmrest while typing; use the palmrest briefly only when resting.

To remove the palmrest

1 Turn the keyboard and palmrest upside down.

2 Push down on the palmrest, and then move it to the left.

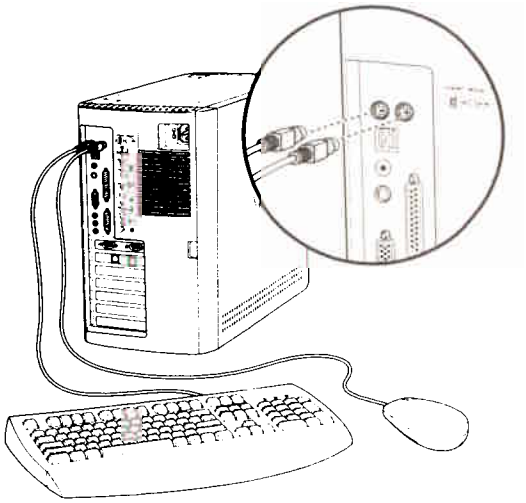
3 Lift the palmrest away from the keyboard.

Connecting the Keyboard and Mouse

Follow these steps to connect the keyboard and mouse.

1 Use the purple ⌨ symbol to locate the **KEYBOARD** connector. Plug the purple keyboard cable into this connector.

2 Use the blue-green 🖱 symbol to locate the **MOUSE** connector and insert the blue-green mouse cable into this connector.



Note

See "Computer Basics" on page 107 for more information on setting up and using the keyboard and mouse.

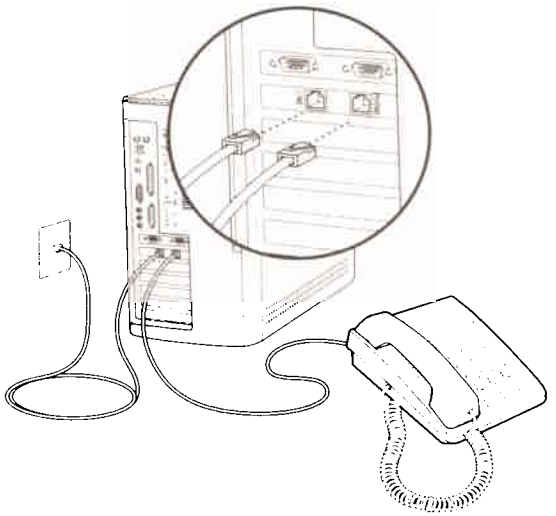
Connecting the Phone Line and Phone

You need to connect the phone line and phone to take advantage of online services, the Internet, and Sony Online Support. The phone line also enables you to register your PC and software online.

There are two phone jacks on the back panel. Follow these steps to connect your phone line and phone.

1 Unplug your phone from the wall jack and plug it into the **PHONE** jack on the PC.

2 Plug one end of the phone cable that came with your system into the **LINE** jack and the other end into the wall jack.



Note

Your Sony PC does not work with party lines, cannot be connected to a coin-operated telephone, and may not work with multiple phone lines or a private branch exchange (PBX).

Connecting the Power Cords

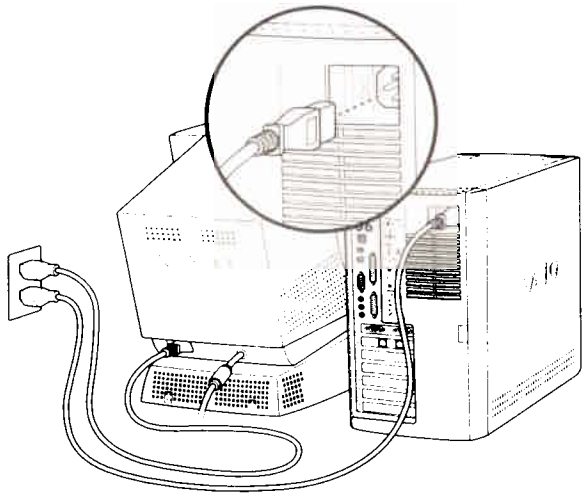
Your Sony PC is shipped with the voltage switch set to 115 volts. This is the correct setting for most homes and businesses in North America. If you use the PC in a location that requires 230 volts, change the setting to 230 volts by moving the switch up.

Caution

⚠ *Do not use your Sony PC with the incorrect voltage setting; this may damage the PC.*

Follow these steps to connect the power cords.

1. Plug the power cord into the connector on the PC.
2. If necessary, plug the display power cord into the display.
3. Plug both the display and power cords into a grounded AC wall outlet, power strip, or Uninterrupted Power Supply.



Connecting Additional Components

You can add functionality to your Sony PC by connecting any of the following components, as described on the following pages:

- TV (page 13)
- Printer (page 16)
- Joystick (page 17)
- MIDI device (page 17)
- Universal Serial Bus (USB) device (page 18)
- Serial device, such as a digital camera (page 19)

Connecting a TV

Connecting a TV to your Sony PC enables you to watch video and hear audio on both the PC and the TV.

Note

✎ *You can also connect the Sony PC to a camcorder, VCR, or other video component that has a* **VIDEO IN** *or* **S-VIDEO IN** *connector.*

If your system includes the Sony Multimedia Computer Display:

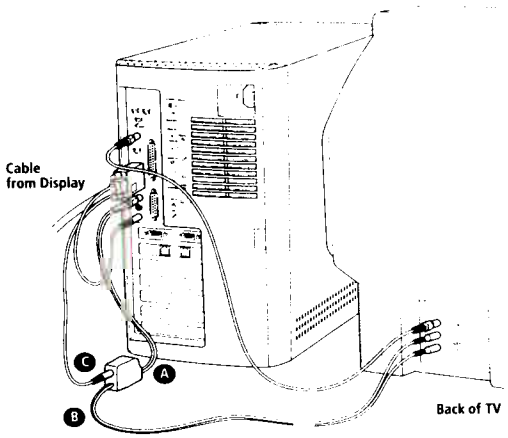
1 Use the yellow symbol to locate the composite **VIDEO OUT** connector on the PC. Plug either end of the yellow video cable into this connector. Then plug the other end of the cable into the TV's **VIDEO IN** connector.

Note

If your TV has an **S-VIDEO IN** *connector, use the S-Video cable to connect the PC's* **S-VIDEO OUT** *jack to the TV's* **S-VIDEO IN** *jack. S-Video provides a better picture than a composite video connection.*

2 Use the green symbol to locate the **HEADPHONES** connector on the PC. Plug the black end of the audio splitter cable Ⓐ into this connector. Then plug the red and white ends of the audio splitter cable Ⓑ into the TV's **AUDIO IN** connectors. (This enables you to hear audio on the multimedia monitor as well as on your TV.)

3 Plug the green audio plug from the display cable into the connector on the audio splitter cable Ⓒ. Then use the red symbol to locate the **MIC** connector on the PC. Plug the red microphone cable from the display cable into this connector.



If your system does not include the Sony Multimedia Computer Display:

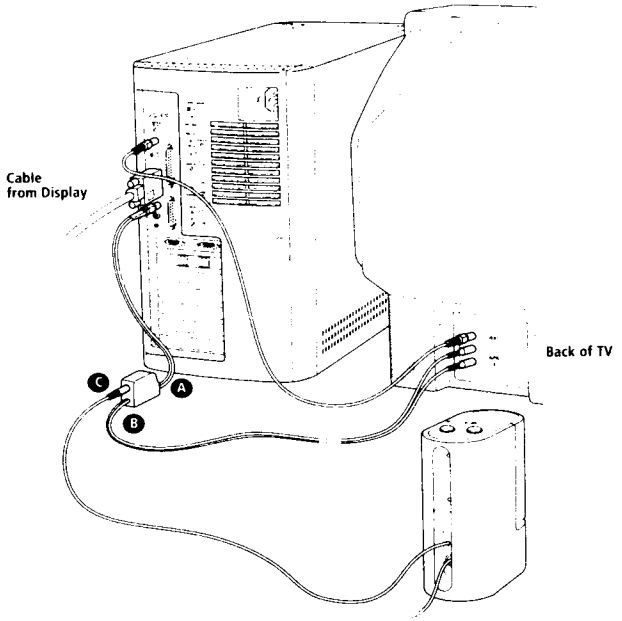
1 Use the yellow symbol to locate the composite **VIDEO OUT** connector on the PC. Plug either end of the yellow video cable into this connector. Then plug the other end of the cable into the TV's **VIDEO IN** connector.

Note

If your TV has an **S-VIDEO IN** *connector, use the S-Video cable to connect the PC's* **S-VIDEO OUT** *jack to the TV's* **S-VIDEO IN** *jack. S-Video provides a better picture than a composite video connection.*

2 Use the green symbol to locate the **HEADPHONES** connector on the PC. Plug the black end of the audio splitter cable Ⓐ into this connector. Then plug the red and white ends of the audio splitter cable Ⓑ into the TV's **AUDIO IN** connectors.

3 Plug the speaker cable into the connector on the audio splitter cable Ⓒ.

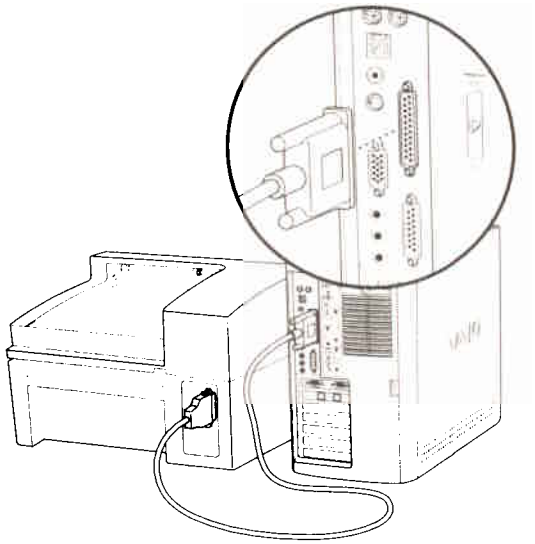


Connecting a Printer

You can connect a printer to your Sony PC to print documents from your PC.

1 Use the dark grey symbol to locate the **PRINTER** connector. Plug the printer cable into this connector.

2 If necessary, plug one end of the printer power cord into the printer, and the other end into a grounded AC wall outlet, power strip, or Uninterrupted Power Supply.



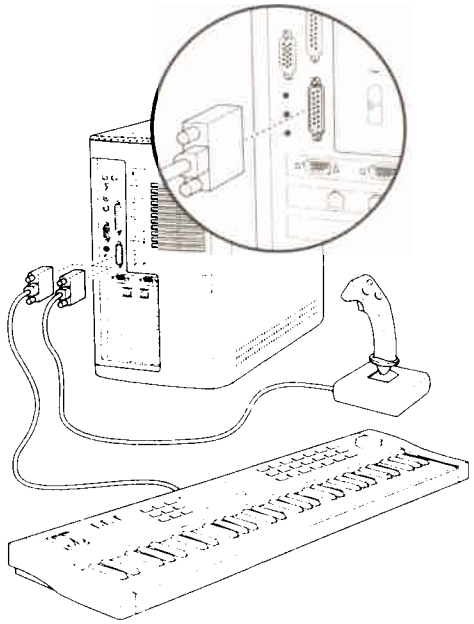
Note

See the manual that came with your printer for more information on setting it up and using it.

Connecting a Joystick or MIDI Instrument

You can connect a joystick or MIDI instrument to your Sony PC. You can also purchase an adapter to connect additional devices.

1 Use the dark grey symbol to locate the **GAME** connector. Plug the joystick or MIDI cable into this connector.



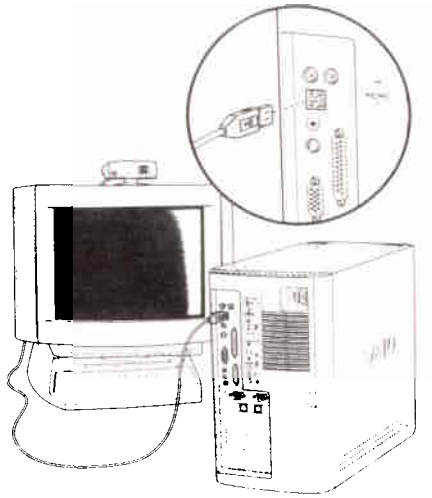
Note

Your MIDI instrument may have a different type of cable which requires an adapter. See the manual that came with your joystick or MIDI instrument for more information on setting it up and using it.

Connecting a Universal Serial Bus (USB) Device

You can connect a USB device to your Sony PC.

❏ Use the dark grey ⇜ symbol to locate the **USB** connector. Plug the USB cable into this connector.



Notes

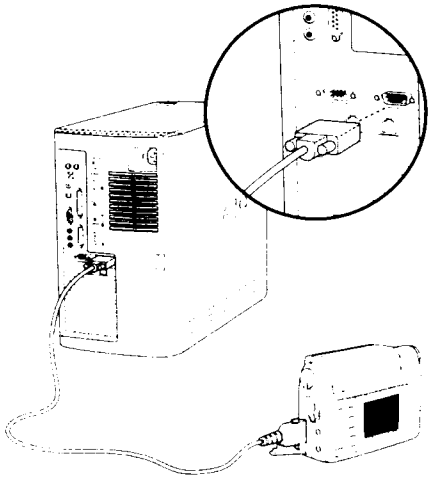
✍❏ *USB ports are included to provide state-of-the-art technology. Until USB support is available at the operating system level, you must supply drivers to use USB devices. You can upgrade your operating system to a version that supports USB at the operating system level once a version becomes available.*

See the manual that came with your USB device for more information on setting it up and using it.

Connecting a Digital Camera or Other Serial Peripheral

You can connect other computer peripherals, such as Sony's digital still camera, to the PC's serial port.

❏ Plug the serial cable from the digital camera into either of the serial ports.



Note

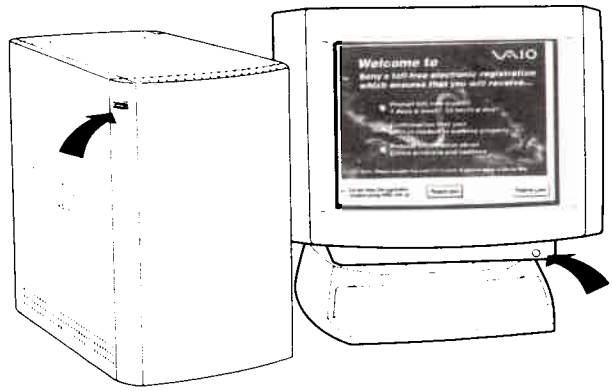
✍❏ *See the manual that came with your digital camera for more information on setting it up and using it.*

Starting Your Sony PC

After you connect all the cables and accessories to your Sony PC, you're ready to turn on the PC.

1 Press the power switch on the display to turn on the power.

2 Press the power switch on the upper-left panel of the PC to turn on the power.



Note

See "Shutting Down Your Sony PC" on page 39 for instructions on turning off your PC.

Registering Windows 95

The first time you turn on your Sony PC, you need to complete a few steps to register and configure the Windows 95 software that is already installed on your PC. You do not need to repeat these steps each time you turn on your computer.

Note

You must register Windows 95 before you can use your PC.

The on-screen instructions guide you through the registration and configuration process. The following is an overview of the process.

1 Gathering information:

- Enter your name.
- Read and accept the License Agreement.
- Enter your Certificate of Authenticity number located on the cover of the *Introducing Windows 95* manual.

2 Windows 95 setup:

- Click the Finish button on the Windows 95 Setup Wizard screen.

3 Selecting your computer settings:

- If necessary, change the Time Zone, Date and Time on the Date/Time Properties screen.

4 Learning about Windows 95:

- If you want, take the tour of Windows 95.

Registering Your PC

Take advantage of Sony's commitment to quality customer support and receive these benefits by registering your Sony PC:

- **Sony Online Support**—Talk to a Support Representative to troubleshoot problems you may be having with your PC.
- **One-year parts and labor warranty**—Protect your investment. See the Limited Warranty Card for details.
- **On-site service**—Provides convenient resolution of any problems.

Follow these steps to use the Sony PC online registration service.

Note

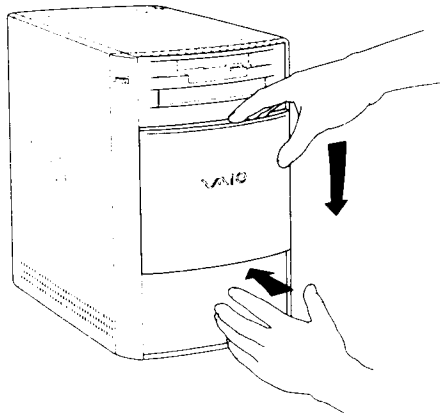
You must connect your phone and phone line before using any online service including the online registration service. See "Connecting the Phone Line and Phone" on page 11.

1. Enter the information requested on the first online registration form. Press the TAB key to move from box to box.
2. Click the Next button to advance to the next form.
3. Complete the remaining forms by clicking the Next button each time you complete a form.
4. Click the Register Now button to register your PC. The Sony PC automatically transfers your registration information using your built-in modem and a toll-free telephone number.

Accessing the CD-ROM and Diskette Drives

You need to open the front panel to access the CD-ROM and diskette drives. Follow these steps to open and close the front panel.

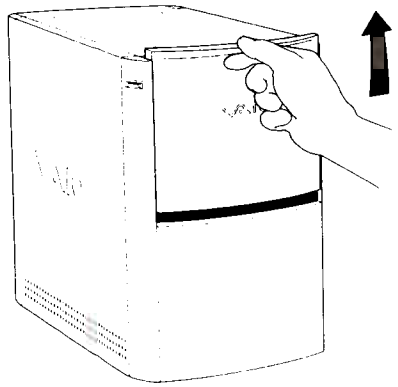
1. Push in the lower front panel on your PC.
2. Slide the upper panel down to reveal the CD-ROM and diskette drives.



Note

If you installed additional drives, you can access these drives by sliding the front panel down to the second position.

3 After you finish using the CD-ROM and diskette drive, slide the upper panel up until you see the lower panel click into place.



Getting Started with VAIO Space

What Is VAIO Space?

Sony VAIO Space is a desktop environment you can use to:

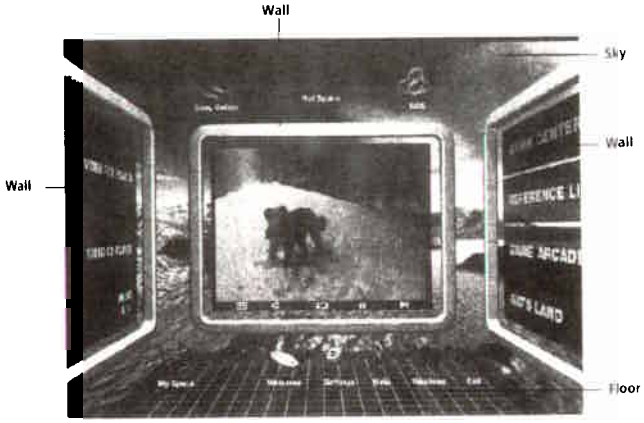
- Launch applications
- Connect to online services
- Access the components in the Sony A/V Suite to watch videos, play CDs, work with sound files, and more

VAIO Space organizes all your preinstalled software, offering easy access to your applications. The 3-D graphics, animated icons, and movie clips in the center of the screen make the VAIO Space desktop a distinctive PC environment.

VAIO Space and Windows 95 work together so that you can easily switch back and forth between the two desktops. You can even choose which desktop appears when you turn on your PC—VAIO Space or Windows 95.

The VAIO Space Screen

As you look at the VAIO Space screen, imagine that you are standing in a room looking at three walls and a ceiling open to the sky.



Area	Description
Sky	Here you can connect to online services, launch an Internet browser, go directly to the Sony World Wide Web site, and access Sony Online Support.
Walls	VAIO Space contains three walls: the Video Wall, the A/V Wall, and the Application Wall.
Floor	The Floor offers instant access to a variety of common tasks, such as getting help and switching to Windows 95.

The wall in the center is the active wall—the one that you can currently use. To move a wall or the Sky to the center, just place the mouse pointer on it, and click when you see a green arrow.

Exploring the Sky

The VAIO Space Sky lets you access online services, Internet browsers, and Sony Online Support. The Sky contains three animated icons: Sony Online, Net Space, and SOS. These icons are available for you to use when they are spinning. If the icons are not currently moving, you need to close any open windows to make the icons available.

Icon	Description
	Launches an Internet browser and displays the Sony World Wide Web site.
	Displays the Net Space window, which enables you to launch online services and Internet browsers. See page 28 for details.
	Launches the SOS program and connects to Sony Online Support where you can speak to a support representative. See page 28 for details.

Using Sony Online

Sony Online gives you direct access to the Sony World Wide Web site. You can use your existing Internet Service Provider or establish a new account with an online service. Unless you are using a network, you must complete the account setup process the first time you use an Internet Service Provider to access Sony Online.

To complete account setup

1. Click the Sony Online icon.
2. Select Modem.
3. Click the New Connection button.
4. Follow the on-screen instructions to complete the account setup process.

Using SOS

The SOS icon connects you to Sony Online Support. You can use SOS to exchange information with a Sony customer service representative. For details on using SOS, see "Calling SOS" on page 84.

To start SOS

1. Click the SOS icon.
2. Complete the on-screen form.
3. Click the Call SOS button.

Using Net Space

The Net Space window enables you to launch online services and Internet browsers. To use these, you must first subscribe to an online service or establish an account with an Internet Service Provider.

To launch an application from Net Space

1. Close any open windows.
2. Place the mouse pointer on the Net Space icon.
3. Click to open the Net Space window.
4. Double-click an icon to start the application.
5. After you finish using the software, click the ☒ button in the upper right-hand corner to close the Net Space window.

Exploring the Walls

The VAIO Space walls help you organize and access the software on your Sony PC. Although you can see all three walls at the same time, only the center wall is active. To activate another wall, just click the wall.

Wall	Description
Video Wall	Displays video clips.
A/V Wall	Contains the Sony A/V Suite where you can play sounds, music, and videos. The A/V Wall also includes the integrated phone/fax application. See "Introducing the Sony A/V Suite" on page 41 for more information.
Application Wall	Provides a convenient way to launch your preinstalled software.

Launching Applications

The software that comes with your Sony PC is arranged into four categories on the Application Wall:

- **Work Center** presents a variety of productivity tools including word processing and financial management applications.
- **Reference Library** stores multimedia reference materials such as encyclopedias and dictionaries.
- **Game Arcade** offers entertainment software titles.
- **Kid's Land** includes software designed especially for children.

To launch software from the Application Wall

1. Click the Application Wall to move it to the center position.
2. Click the category you want to open: Work Center, Reference Library, Game Arcade, or Kid's Land.
3. Double-click the icon to start the software.

Adding and Removing Applications in VAIO Space

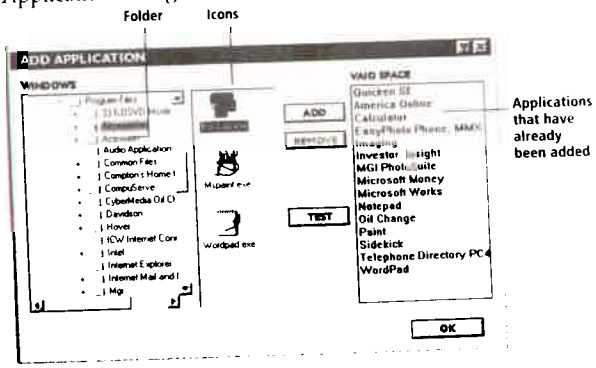
If you purchase additional software, you can add icons to VAIO Space so that you can easily launch these applications. You can add software to any of the following areas within VAIO Space:

- Work Center
- Reference Library
- Game Arcade
- Kid's Land
- Net Space
- My Space
- More A/V

To add an application to VAIO Space

1. Install the application by following the installation instructions that come with the software.
2. Open the VAIO Space area where you want to add the application.

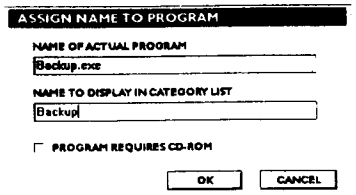
   For example, to add a utility to the Work Center, move the Application Wall to the center position, and click the Work Center category.
3. Click the Add/Remove Application button to display the Add Application dialog box.



4. Under Windows, change drives and folders, as necessary, to select the folder containing the application.
5. Select the icon for the software you want to add.

   Note

   You can launch the application to verify your icon selection by clicking the Test button.
6. In the Assign Name to Program dialog box, edit the file name to make it more descriptive if necessary.



   Note

   If the software documentation indicates that you need to insert a CD each time you run the application, select the Program Requires CD-ROM check box.
7. Click the OK button to add the application.
8. Click the OK button to close the Add Application dialog box.

To remove an application from VAIO Space

Note

The following procedure only removes the application from VAIO Space. To remove the application and all its files from your hard disk, see the Introducing Microsoft Windows 95 guide *or the Windows 95 online help.*

1. Open the VAIO Space area containing the application you want to remove.
2. Click the Add/Remove Application button to display the Add Application dialog box.
3. Under VAIO Space, select the name of the application you want to remove.
4. Click the Remove button.
5. Click OK to remove the connection to VAIO Space.
6. Click the OK button to close the Add Application dialog box.

Exploring the Floor

The icons on the VAIO Space Floor offer convenient access to common tasks, such as getting help and switching to the Windows 95 environment. The icons are available for you to use when they are spinning. If the icons are not currently moving, you need to close any open windows to make the icons available.

Icon	Description
	Opens a window where you can store the software you use most often.
	Runs the Welcome CD, where you can preview the applications preinstalled on your PC and learn about the technology your Sony PC has to offer.
	Lets you change your VAIO Space preferences.
	Displays on-screen help for VAIO Space.
	Switches to Windows 95, placing VAIO Space on the taskbar so that you can return to it easily.
	Closes VAIO Space and switches to Windows 95.

Using My Space

For quick access to the applications you use most often, place them in the My Space window. To add software to this window, see "Adding and Removing Applications in VAIO Space" on page 30.

To launch an application from My Space

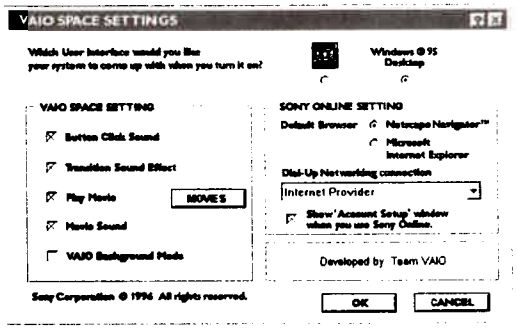
1 Click the My Space icon to open the My Space window.

2 Double-click an icon to start an application.

3 After you finish using the software, click the Close button to close the My Space window.

Changing VAIO Space Settings

You can customize VAIO Space in a number of ways. For instance, you can choose a default environment, turn off sound effects, and select movies for the Video Wall.



To set your VAIO Space preferences

1 Click the Settings icon to open the VAIO Space Setting window.

2 Change any of the following options.

Option	Description
Which User Interface would you like your system to come up with when you turn it on?	Choose VAIO Space or Windows 95 as your startup desktop.
Button Click Sound	Choose whether you hear a sound when you click the mouse.
Transition Sound Effect	Choose whether you hear a sound when you make a wall or the Sky active.
Play Movie	View movie clips on the Video Wall.
Movie Sound	Turn the Video Wall movie soundtrack on or off.
Movies button	Add or remove movies. See "Selecting Movies for the Video Wall" on page 36.
VAIO background mode	Choose background mode when you want to use multiple VAIO Space applications at the same time.
Default Browser	Select the Internet browser to launch when you click the Sony Online icon.
Dial-Up Networking connection	Select the Internet Service Provider to use with Sony Online.
Show 'Account Setup' window when you use Sony Online	View or bypass the Account Setup window.

3 After you finish setting preferences, click the OK button.

Selecting Movies for the Video Wall

You can add MPEG movie files to the Video Wall and remove the default files.

To add movies

1 Click the Settings icon on the Floor.

2 Click the Movies button.

3 Under Windows, select the icon for the movie you want to add.

Note

Change drives and folders, as necessary, to select the correct icon. (.MPG files appear in this window.

4 Click the Add button.

5 Click the OK button to close the Add Movie window.

To remove movies

Caution

Removing movies deletes them from your hard disk drive.

1 Click the Settings icon on the Floor.

2 Click the Movies button.

3 Under VAIO Space, select the .MPG file you want to delete.

4 Click the Remove button.

5 Click the OK button to confirm that you want to delete the file.

6 Click the OK button to close the Add Movie window.

Using the Windows 95 Taskbar

The Windows 95 taskbar contains the Start button and buttons representing each open application and folder. It offers a quick and easy way to switch between open applications. By default, the taskbar appears at the bottom of the screen, but you can move it to any edge of the screen. While you are in VAIO Space, the taskbar is hidden but readily accessible.

To use the Windows 95 taskbar

1 Move the mouse pointer to the bottom of the screen to display the taskbar. The following shows a taskbar with several open applications.

2 Do any of the following:

Action	Procedure
Switch to another application	Click the application's button on the taskbar.
Launch another application	Click the Start button, point to Programs, and click the software title you want.
Move the taskbar	Click an empty part of the taskbar and then drag it to a different location. To display the taskbar after you move it, point to the edge of the screen where you placed the taskbar.

Note

The taskbar disappears when you move the pointer away from it.

Switching to Windows 95

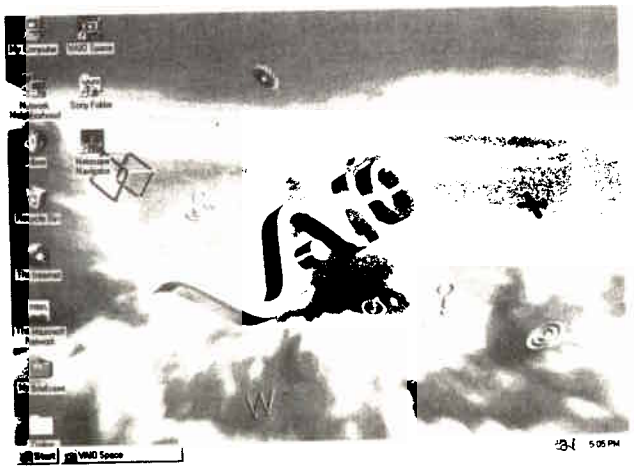
VAIO Space and Windows 95 run simultaneously, and it's easy to switch back and forth between them. If you don't plan to use VAIO Space for an extended period of time, you can close it and work only in Windows 95.

To switch between Windows 95 and VAIO Space

1. Click the Windows icon on the Floor.
2. To return to VAIO Space, click the VAIO Space button on the taskbar.

To close VAIO Space

1. Click the Exit icon to open the Exit VAIO Space dialog box.
2. Click the Close VAIO Space button to display the Windows 95 desktop.



To launch VAIO Space from Windows 95

- Double-click the VAIO Space icon on the Windows 95 desktop.

Shutting Down Your Sony PC

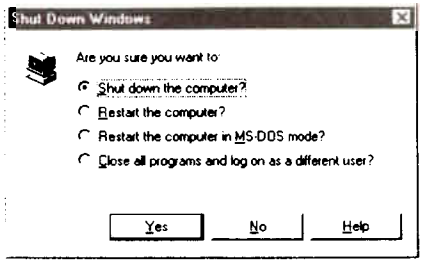
When you're ready to turn off your PC, use the following procedure.

Caution

⚠ *To avoid the potential loss of data, do not press the power switch before you shut down the PC.*

To shut down your PC

1. Display the Windows 95 taskbar. See "Using the Windows 95 Taskbar" on page 37.
2. Click the Start button to open the Start menu.
3. Click Shut Down at the bottom of the Start menu to display the Shut Down Windows dialog box.



4. Click Shut Down the Computer.
5. Click Yes.

Note

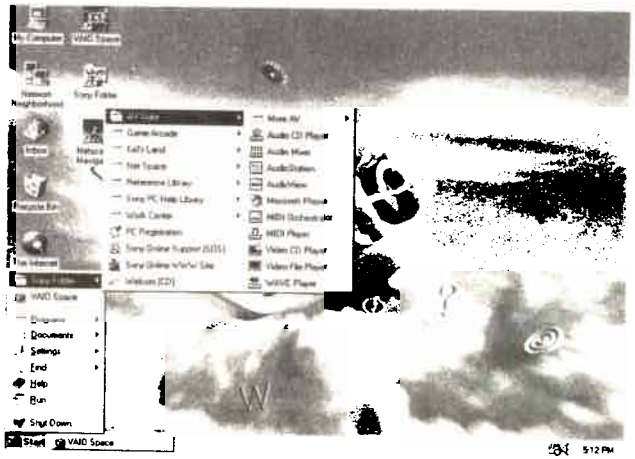
✎ *Respond to any prompts about saving documents.*

6. Wait for your PC to turn off automatically.
7. Turn off the display and any other peripherals connected to your PC.

Introducing the Sony A/V Suite

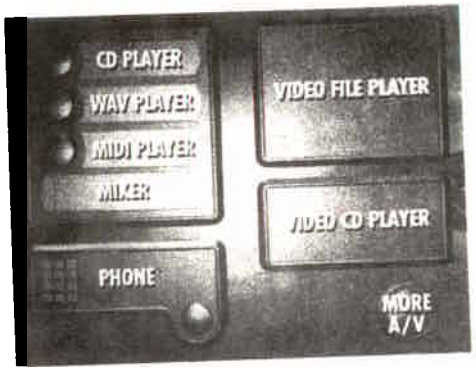
The Sony A/V Suite provides an integrated suite of software that gives you complete control of the audio/video features of your Sony PC. The intuitive, "home stereo component" interface offers you a familiar set of sound and video controls.

You can access the Sony A/V Suite by clicking the A/V Wall in VAIO Space. You can also access the individual components from the Windows 95 desktop by opening the Start menu, pointing to Sony Folder, pointing to A/V Suite, and then clicking the player you want to use.



The A/V Wall

In addition to including the Sony A/V Suite, the A/V Wall provides access to your phone and, through the More A/V button, access to additional A/V software titles. Each component is dedicated to a specific audio/video function.



Component	Description
CD Player	Plays audio tracks from your CD-ROM drive. See "Using the CD Player" on page 46.
WAV Player	Plays, records, and edits WAVE (.WAV) sound files. See "Using the WAV Player" on page 53.
MIDI Player	Plays, records, and edits MIDI (.MID) music files using external MIDI instruments. See "Using the MIDI Player" on page 66.
Mixer	Controls the volume and tone levels for sound files, videos, audio tracks, and other devices. See "Using the Mixer" on page 44.
Video File Player	Plays AVI (.AVI) and MPEG (.MPG and .DAT) videos on your Sony PC screen. See "Using the Video File Player" on page 73.
Video CD Player	Plays Video CDs. See "Using the Video CD Player" on page 78.

Component	Description
Phone	Launches the Phone application where you can use the built-in speakerphone, answering machine, and fax features. See the separate user guide for this application.
More A/V	Lists additional software titles that come with your Sony PC. You can also use this area to add other A/V software for quick access. See "Using More A/V" on page 81.

The CD, WAV, MIDI, and Video File Players enable you to create playlists. Playlists let you save a selection of tracks or files you want to hear or view so that you can reuse them later.

Note

Some components and players in the A/V Suite have buttons with indicator lights. These components are active when the light is on.

Using the Mixer

The Mixer enables you to control your Sony PC's sound sources for Windows multimedia and sound programs. The Mixer has individual controls for:

- Master (all sources) volume level

  Note

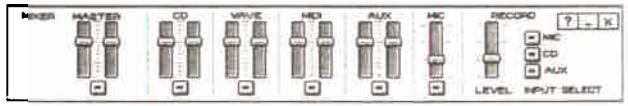
  Use the Master setting to override the individual settings for the other players and devices.

- CD Player volume level

  Note

  If you add a CD-ROM drive with recording capabilities, use the CD recording setting to set the input volume.

- WAV Player volume level
- MIDI Player volume level
- Auxiliary device output level
- Microphone output level



WARNING

*Do **not** use headphones the first time you use the Mixer. The default audio settings may be loud enough to cause hearing problems or discomfort when played through headphones. Listening to loud music with headphones or using headphones for an extended period of time may also cause hearing problems or discomfort.*

Note

If you change an A/V player's volume setting, the Mixer display updates automatically. Likewise, if you change the Mixer volume settings for an A/V player, the player's volume setting updates automatically.

To change the Mixer volume setting

1. Click the Mixer on the A/V Wall.
2. Drag the slider(s) to set the volume for the selected sound source.

Drag the area between the sliders to move both sliders at the same time

Drag a slider to change only that slider

3. Repeat step 2 until you are satisfied with the resulting sound.

Other Mixer Functions

Action	Procedure
Toggle the sound on and off	Click [-] (Mute) for the specified source.

Using the CD Player

The CD Player plays regular audio CDs in your Sony PC's CD-ROM drive. It features the same type of functionality as an ordinary CD player (such as Next Track and Shuffle Play). You can also create temporary playlists of your favorite songs for the current listening session.

Playing an Audio CD

You can play an audio CD at any time, as long as you're not currently running a CD-ROM program. You can even close the CD Player window while listening to a CD. If the CD has a playlist, the player plays the selected tracks. For more information about playlists, see "Creating CD Playlists" on page 50.

To play an audio CD

1. Click the CD Player on the A/V Wall.
2. Click [▲] (Eject) to open the CD tray.
3. Place an audio CD in the CD tray, and then click [▲] (Eject) again to close the tray.
4. Click [▶] (Play).

   The CD Player displays the track name and number, the CD name, the elapsed time, and a rotating CD that indicates the CD is playing.

Note

The CD and track names appear as "untitled" until you name them. (See "Naming a CD" on page 48 and "Naming CD Tracks" on page 49 for details.)

Other CD Player Functions

Action	Procedure
Toggle the sound on and off	Click MUTE.
Stop play	Click [■] (Stop).
Pause play	Click [II] (Pause).
Go to the next track	Click [▶▶I] (Next).
Go to the beginning of the current track	Click [I◀◀] (Previous).
Rewind the current track	Click and hold [◀◀] (Rewind).
Fast forward the current track	Click and hold [▶▶] (Fast Forward).
Play the tracks in random order	Click SHUFFLE.
Adjust the volume	Drag the CD volume sliders on the CD Player or the Mixer. See "Using the Mixer" on page 44.
Create or update a playlist	Click PLAYLIST. See "Creating CD Playlists" on page 50.
Play an intro to each track in the playlist	Click INTRO.
Play the current playlist tracks in the order in which they appear	Click CONTINUE.
Continuously play ("loop") the current playlist tracks in the order in which they appear	Click REPEAT.
Open or close the CD tray	Click [▲] (Eject).

Note

To open the CD tray when you do not have a CD in the tray, press the Eject button on the front panel of the PC.

Naming a CD

If you name the CD, the CD Player stores this information and remembers it whenever you play the CD.

To name a CD

1. Click the CD Player on the A/V Wall.
2. Click the PLAYLIST button to display the CD Playlist Edit dialog box.
3. Click the Name CD button to display the Name CD dialog box.

4. Type the name of the CD.
5. Click the OK button to save the CD name and return to the CD Playlist Edit dialog box.

   The CD name now appears in the CD Name box.
6. Click the OK button to return to the CD Player.

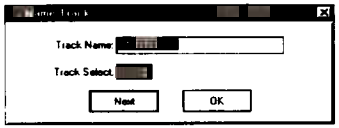
   The CD resumes playing and the name now appears in the CD Player display.

Naming CD Tracks

You can name the tracks on a CD as well. The CD Player stores this information and remembers it whenever you play the CD.

To name tracks on a CD

1. Click the CD Player on the A/V Wall.
2. Click the PLAYLIST button to display the CD Playlist Edit dialog box.
3. Click the Name Track button to display the Name Track dialog box.



4. Type the name of the track.
5. Click the Next button to name the next (or another) track.

   Repeat this step for other tracks you want to name.
6. Click the OK button to save the track name(s) and return to the CD Playlist Edit dialog box.

   The track names now appear in the CD Tracks list.

   Note

   If you have a playlist for this CD, the track names also appear in the Playlist.
7. Click the OK button to return to the CD Player.

   The CD resumes playing and the current track name now appears in the CD Player.

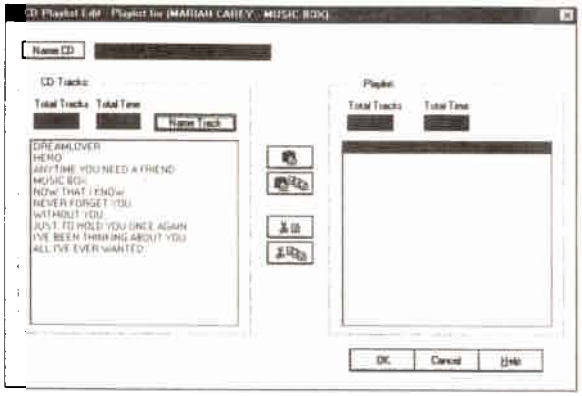
Creating CD Playlists

You can create a temporary playlist of the tracks you want to play during your current listening session. You can customize the list to include only your favorite tracks or all tracks on the CD.

To create and customize a CD playlist

1 Click the CD Player on the A/V Wall.

2 Click the PLAYLIST button to display the CD Playlist Edit dialog box.



3 Select the tracks you want to add to the playlist:

Action	Procedure
Copy one track in the Names list to the playlist	Double-click the track, or select the track and then click (Add Selection).
Copy all tracks in the Names list to the playlist	Click (Add All Files).
Copy a range of tracks in the Names list to the playlist	Press the SHIFT key on the keyboard while clicking the first and last tracks in the range, and then click (Add Selection).
Copy selected tracks in the Names list to the playlist	Press the CTRL key on the keyboard while clicking each track, and then click (Add Selection).

4 Click the OK button to save the temporary playlist.

Note

You can add CD tracks to a playlist by opening the playlist and selecting the tracks you want to add as described in step 3.

Removing Tracks from a CD Playlist

If you don't want to listen to specific tracks on a CD, you can remove them from the temporary playlist.

To remove a track from a CD playlist

1 Click the CD Player on the A/V Wall.

2 Click the PLAYLIST button to display the CD Playlist Edit dialog box.

3 Select the tracks you want to remove from the playlist:

Action	Procedure
Remove one track from the playlist	Click the track, and then click [ ] (Delete Selection).
Remove all tracks from the playlist	Click [ ] (Delete All Selections).

4 Click the OK button to save the temporary playlist.

Using the WAV Player

The WAV Player lets you record and play WAV sounds (such as keyboard clicks and your own voice). You can make playlists of your favorite sounds to play during current and future listening sessions. You can also use the WAV Player to edit sounds. See "Using AudioView" on page 59 for details.

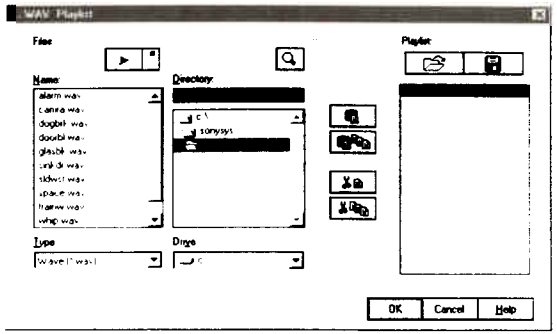
Playing a WAV File

You can open and play individual WAV files, or you can create a list of specific WAV files to play.

To play a WAV file

1 Click the WAV Player on the A/V Wall.

2 Click PLAYLIST to display the WAV Playlist dialog box.



3 Select a WAV file from the Name list.

4 Click [ ] (Play) to hear the sound.

5 Click the OK button to return to the WAV player.

Other WAV Player Functions

Action	Procedure
Toggle the sound on and off	Click MUTE.
Stop play	Click ■ (Stop).
Pause play	Click ⏸ (Pause).
Create or update a playlist	Click PLAYLIST. See "Creating WAV Playlists" on page 55.
Go to the next file in the playlist	Click ⏭ (Next).
Go to the beginning of the current file in the playlist	Click ⏮ (Previous).
Rewind the current file	Click and hold ⏪ (Rewind).
Fast forward the current file	Click and hold ⏩ (Fast Forward).
Play the playlist files in random order	Click SHUFFLE.
Adjust the volume	Drag the WAV volume sliders on the WAV Player or the Mixer. See "Using the Mixer" on page 44.
Play an intro to each file in the playlist	Click INTRO.
Play the current playlist files in the order in which they appear	Click CONTINUE.
Continuously play ("loop") the current playlist files in the order in which they appear	Click REPEAT.
Record a WAV sound	Click ● (Record). See "Recording a WAV File" on page 65.
Edit a WAV sound	Click AUDIOVIEW to launch AudioView. See "Editing a WAV File" on page 59.

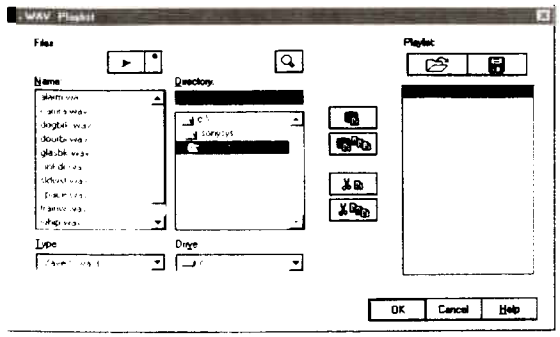
Creating WAV Playlists

You can create or customize a playlist of the WAV files you want to play (such as animal sounds or funny noises). You can add files one at a time, or you can add a group of files.

To create and customize a WAV playlist

1 Click the WAV Player on the A/V Wall.

2 Click the PLAYLIST button to display the WAV Playlist dialog box.



3 Select the WAV files you want to add to the playlist, changing drives and folders as necessary:

Action	Procedure
Copy one file in the Names list to the playlist	Double-click the file, or select the file and then click (Add Selection).
Copy all files in the Names list to the playlist	Click (Add All Files).
Copy a range of files in the Names list to the playlist	Press the SHIFT key on the keyboard while clicking the first and last files in the range, and then click (Add Selection).
Copy selected files in the Names list to the playlist	Press the CTRL key on the keyboard while clicking each file, and then click (Add Selection).
Find all WAV files on the selected drive	Click (Search Selected Drive).

Note

To play a sound file, select the file, and then click (Play). To play the files you select automatically, click (Automatically Play Highlighted File).

4 Click (Save File), and then type a file name.

Note

Change drives and folders, as necessary, to save the file to the correct location. The sound playlist file extension defaults automatically to VSL.

5 Click the OK button to save the file.

Note

You can add WAV files to a playlist by opening the playlist and selecting the files you want to add. To remove files from a playlist, see "Removing Files from a WAV Playlist" on page 58.

Playing a WAV Playlist

If you have more than one WAV playlist, you must select which list you want to play. If you have only one playlist, just click (Play) on the WAV Player.

To play a WAV playlist

1 Click the WAV Player on the A/V Wall.

2 Click the PLAYLIST button to display the WAV Playlist dialog box.

3 Click (Open File), and then select the file you want to open.

Note

Change drives and folders, as necessary, to select a file.

4 Click the OK button to open the file and return to the WAV Playlist dialog box.

5 Click the OK button to return to the WAV Player.

6 Click (Play) to hear the sounds in the playlist.

Removing Files from a WAV Playlist

If you don't want to hear specific files in a WAV playlist, you can remove them from the list.

To remove files from a WAV playlist

1. Click the WAV Player on the A/V Wall.
2. Click the PLAYLIST button to display the WAV Playlist dialog box.
3. Select the WAV files you want to remove from the playlist:

Action	Procedure
Remove one file from the playlist	Select the file, and then click (Delete Selection).
Remove all files from the playlist	Click (Delete All Selections).

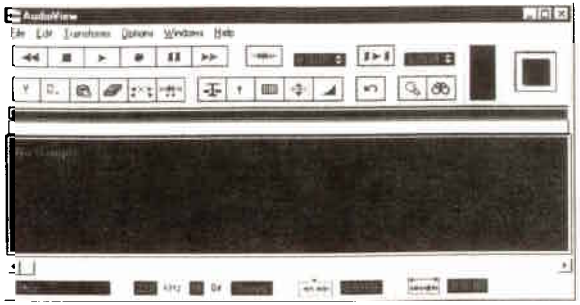
4. Click (Save File), and then type a new file name or select the name of the current playlist.
5. Click the OK button to save the file.

Note

If you selected the name of the current playlist, click the Yes button in the next dialog box, which asks whether you want to overwrite the file.

Using AudioView

AudioView enables you to edit WAV sounds using common editing functions, such as cut, copy, and paste. Other editing functions include sound mixing and changing playback volumes. You can record and edit new WAV sounds as well.



Editing a WAV File

You can edit a WAV file to remove dead (flat) spots and to rearrange and mix sounds. Most editing requires selecting start and end points of a segment or range that you want to change.

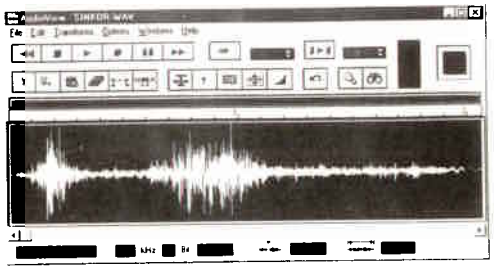
Note

If you choose AUDIOVIEW when a WAV file is already open, the current WAV file appears.

To cut and paste data

1. Click the WAV Player on the A/V Wall.
2. Click the AUDIOVIEW button to display AudioView.
3. If necessary, open the File menu and select Open to display the file you want to edit.

4 Click [▶] (Play) to hear the sound.



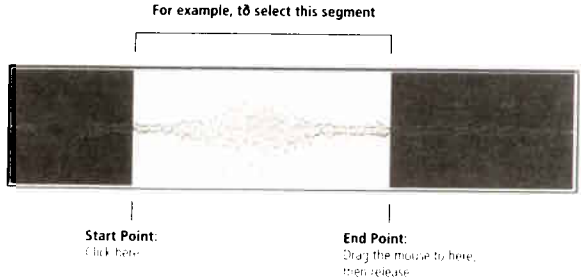
5 Select the segment you want to cut. See "Segment Selection Functions" below for details.

Segment Selection Functions

Action	Procedure
Select a segment	Click the Start point in the graphic display, drag the mouse to the right to the desired End point, and then release.
Select the entire file	Double-click anywhere in the graphics display, or open the Edit menu and select Select All.
Select a segment as you listen	Play the file. When you hear the sound you want to use as the Start Point, hold down the [➡] (Select Range During Playback) as the passage plays. Release the button at the end of the desired segment, and then click [■] (Stop).
Make rough adjustments to the selected segment	Hold down the SHIFT key on the keyboard, place the mouse cursor at the desired location and then click.
Make precise adjustments to the selected segment	Click anywhere on the Range Start or Range End areas (to the left and right of [➡], respectively). Then click the up or down arrow to adjust the time by 1/100th second.

Note

After you select the segment, the display highlights the segment. Note the numbers in the Range Start and Range End marker boxes. These numbers can help you select the same segment again.



6 Click [✂] (Cut).

Note

If you want to paste the data into another WAV file, open that file now.

7 If you want to move the segment, click the location where you want to paste the data, and then click [📋] (Paste).

8 Click [▶] (Play) to hear the edited sound.

9 When you're ready to save the new sound, open the File menu and select Save As..., and then type a file name.

Note

Change drives and folders, as necessary, to save the file to the correct location.

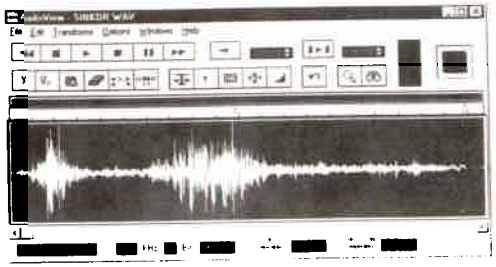
10 Click the OK button to save the file.

To copy and paste data

1 Click the WAV Player on the A/V Wall.

2 Click the AUDIOVIEW button to display AudioView.

3 If necessary, open the File menu and select Open to display the file you want to edit.



4 Click [▶] (Play) to hear the sound.

5 Select the segment you want to copy, and then click [⧉] (Copy). See "Segment Selection Functions" on page 60 for details.

The display highlights the selected segment.

Note

If you want to paste the data into another WAV file, open that file now.

6 If you want to move the segment, click the location where you want to paste the data, and then click [📋] (Paste).

7 Click [▶] (Play) to hear the edited sound.

8 When you're ready to save the new sound, open the File menu and select Save As..., and then type a file name.

Note

Change drives and folders, as necessary, to save the file to the correct location.

9 Click the OK button to save the file.

Other AudioView Edit Functions

Action	Procedure
Stop play	Click [■] (Stop).
Pause play	Click [⏸] (Pause).
Rewind the current sound	Click and hold [◀◀] (Rewind).
Fast forward the current sound	Click and hold [▶▶] (Fast Forward).
Adjust the volume	Drag the WAV volume sliders on the WAV Player or the Mixer. See "Using the Mixer" on page 44.
Select a segment or range	See "Segment Selection Functions" on page 60.
Play the selected segment	Click [▮▶▮] (Play Range).
Delete all data except a selected segment	Click [✂] (Trim).
Adjust the volume (amplitude) of a selected segment	Click [⇳] (Scale).
Echo a selected segment	Click [↑] (Echo).
Remove background noise	Click [▥] (Noise Gate) to find every sample in the selected segment with an amplitude below a specific amount.
Adjust the volume (amplitude) and improve the signal-to-noise ratio of a sound recorded at too low a level	Click [⇕] (Normalize).
Fade in or fade out a selected segment	Click [◢] (Fade).
Undo the last edit or transform operation	Click [↶] (Undo).
Zoom in on a selected segment	Click [🔍] (Zoom In).
Zoom out of a selected segment	Click [🔭] (Zoom Out).

Other AudioView Functions—Edit and Transforms Menus

Action	Procedure
Insert silence (dead or flat spot)	Open the Edit menu and select Insert Silence.
Copy a file to the Clipboard	Open the Edit menu and select Load File into Clipboard.
Save contents of the Clipboard to a file	Open the Edit menu and select Save Clipboard, and then specify the file name.
Combine (mix) two sounds by copying one sound *over* the other	Copy or cut a segment, select a segment in the file you want to mix, and then open the Edit menu and select Mix Paste.
Locate and display the highest volume level (amplitude) within a selected segment	Open the Transforms menu and select Find Peak.
Change positive amplitude values to negative, and vice versa	Open the Transforms menu and select Invert Samples.
Center the display for a sound recorded with an offset or adjust the offsets of a file after cutting and pasting data from different files	Open the Transforms menu and select DC Offset.
Paste a selected segment backwards	Open the Transforms menu and select Reverse.
Fade out the current file, fade in the data currently in the Clipboard, and then combine the sounds	Open the Transforms menu and select Crossfade.
Reduce a sound's sample rate by 50 percent	Open the Transforms menu and select Halve Sample Rate.
Convert a 16-bit file to 8-bit format	Open the Transforms menu and select 16 ► 8 Bits.
Change a stereo file into a mono file	Open the Transforms menu and select Stereo ► Mono.
Convert an 8-bit PCM WAV file to Sound Blaster® VOC format	Open the Transforms menu and select WAV ► VOC.
Convert a VOC file to 8-bit PCM WAV format	Open the Transforms menu and select VOC ► WAV.
Change the sample rate	Open the Tranforms menu and select Change Speed.

Note

For additional information about how to use these functions, see the online help.

Recording a WAV File

You can make WAV recordings easily using the WAV Player or AudioView.

1. Select an input source (such as Mic or CD) in the Mixer and set its record volume level. See "Using the Mixer" on page 44 for details.
2. If you want to record from the CD-ROM drive or from an external source (such as a tape deck), find the selection you want to record.
3. Click [●] (Record) on the WAV Player or AudioView display. The red light blinks, indicating that the player is in Record Standby mode.
4. Click [►] (Play) to begin recording. Speak into the microphone or start playing the material you prepared in step 2.
5. If necessary, click [II] (Pause) to pause temporarily during recording. Click [II] (Pause) again to resume recording.

   Note

   Be sure to use the [II] (Pause) button to resume recording. If you click [●] (Record)to resume recording, you erase the existing recording and start a new one.

6. Click [■] (Stop) after you finish recording.
7. If you are using AudioView to record, the display shows a graphical representation of the recording.
8. Click [►] (Play) to hear the recording.

   Note

   You can repeat steps 2 through 8 until you are ready to save the recording.

9. When you're ready to save the recording, open the File menu and select Save, and then type a file name.

   Note

   Change drives and folders, as necessary, to save the file to the correct location. If you don't want to save the recording, record over it or close the file.

10. Click the OK button to save the file.

Using the MIDI Player

The MIDI Player plays and records standard MIDI (.MID) music files. You can also make playlists of your favorite music to play during current and future listening sessions.

The MIDI player also includes the MIDI Orchestrator, a tool that enables you to record and play as many as 16 tracks. You can access the MIDI Orchestrator by clicking the MIDI ORCH button on the MIDI Player. For more information about using the MIDI Orchestrator, see the online help.

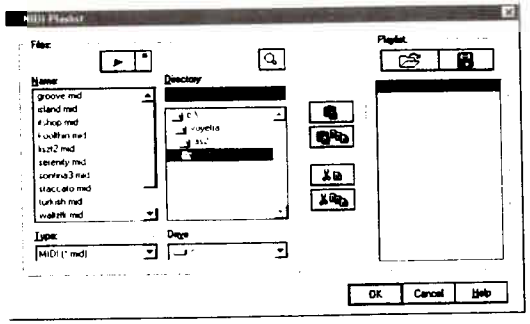
Playing a MIDI File

You can open and play individual MIDI files, or you can create a list of specific MIDI files to play.

To play a MIDI file

1 Click the MIDI Player on the A/V Wall.

2 Click PLAYLIST to display the MIDI Playlist dialog box.



3 Select a MIDI file from the Name list.

4 Click [▶] (Play) to hear the music.

5 Click the OK button to return to the MIDI player.

Other MIDI Player Functions

Action	Procedure
Mute the sound	Click MUTE.
Stop play	Click [■] (Stop).
Pause play	Click [❚❚] (Pause).
Create or update a playlist	Click PLAYLIST. See "Creating MIDI Playlists" on page 68.
Go to the next file in the playlist	Click [▶▶|] (Next).
Go to the beginning of the current file in the playlist	Click [|◀◀] (Previous).
Rewind the current file	Click and hold [◀◀] (Rewind).
Fast forward the current file	Click and hold [▶▶] (Fast Forward).
Play the playlist files in random order	Click SHUFFLE.
Adjust the volume	Drag the MIDI volume sliders on the MIDI Player or the Mixer. See "Using the Mixer" on page 44.
Play an intro to each file in the playlist	Click INTRO.
Play the current playlist files in the order in which they appear	Click CONTINUE.
Continuously play ("loop") the current playlist files in the order in which they appear	Click REPEAT.
Record a MIDI music file	Click [●] (Record). See "Recording a MIDI File" on page 72.

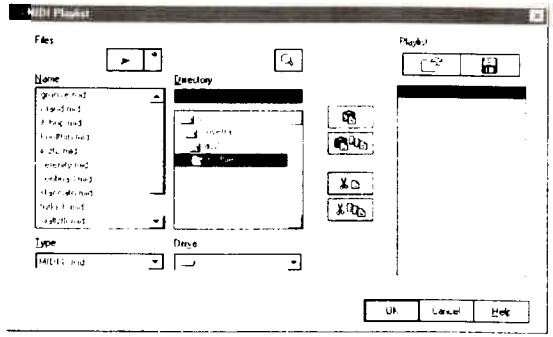
Creating MIDI Playlists

You can create or customize a playlist of the MIDI files you want to play (such as files of an individual composer or files from your own recording sessions). You can add files one at a time, or you can add a group of files.

To create and customize a MIDI playlist

1 Click the MIDI Player on the A/V Wall.

2 Click the PLAYLIST button to display the MIDI Playlist dialog box.



Note

To play a music file, select the file, and then click ▶ (Play). To play the files you select automatically, click (Automatically Play Highlighted Files).

3 Select the MIDI files you want to add to the playlist, changing drives and folders, as necessary:

Action	Procedure
Copy one file in the Names list to the playlist	Double-click the file, or select the file, and then click (Add Selection).
Copy all files in the Names list to the playlist	Click (Add All Files).
Copy a range of files in the Names list to the playlist	Press the SHIFT key on the keyboard while clicking the first and last files in the range, and then click (Add Selection).
Copy selected file in the Names list to the playlist	Press the CTRL key on the keyboard while clicking each file, and then click (Add Selection).
Find all MIDI files on the selected drive	Click (Search Selected Drive).

4 Click (Save File), and then type a file name.

Note

Change drives and folders, as necessary, to save the file to the correct location. The MIDI playlist file extension defaults automatically to VMI.

5 Click the OK button to save the file.

Note

You can add MIDI files to a playlist by opening the playlist and selecting the files you want to add. To remove files from a playlist, see "Removing Files from a MIDI Playlist" on page 71.

Playing a MIDI Playlist

If you have more than one MIDI playlist, you must select which list you want to play. If you have only one playlist, just click [▶] (Play) on the MIDI Player.

To play a MIDI playlist

1. Click the MIDI Player on the A/V Wall.
2. Click the PLAYLIST button to display the MIDI Playlist dialog box.
3. Click [📂] (Open File), and then select the file you want to open.

   Note

   Change drives and folders, as necessary, to select a file.
4. Click the OK button to open the file and return to the MIDI Playlist dialog box.
5. Click the OK button to return to the MIDI Player.
6. Click [▶] (Play) to hear the music in the playlist.

Removing Files from a MIDI Playlist

If you don't want to hear specific files in a MIDI playlist, you can remove them from the list.

To remove files from a MIDI playlist

1. Click the MIDI Player on the A/V Wall.
2. Click the PLAYLIST button to display the MIDI Playlist dialog box.
3. Select the MIDI files you want to remove from the playlist:

Action	Procedure
Remove one file from the playlist	Select the file, and then click [✂] (Delete Selection).
Remove all files from the playlist	Click [✂] (Delete All Selections).

4. Click [💾] (Save File), and then type a new file name or select the name of the current playlist.
5. Click the OK button to save the file.

   Note

   If you selected the name of the current playlist, click the Yes button in the next dialog box, which asks whether you want to overwrite the file.

Recording a MIDI File

You can make MIDI recordings easily using the MIDI Player and a MIDI instrument. Before you record a MIDI file, you must connect a MIDI instrument to the MIDI interface connector on the back panel of your Sony PC (see "Connecting a Joystick or MIDI Instrument" on page 17).

1. Click the MIDI Player on the A/V Wall.
2. Click [●] (Record). The red light blinks, indicating that the MIDI Player is in Record Standby mode.
3. Click [▶] (Play) to begin recording, and then start playing the MIDI instrument.
4. If necessary, click [II] (Pause) to pause temporarily during recording. Click [II] (Pause) again to resume recording.

   Note

   Be sure to use the [II] (Pause) button to resume recording. If you click [●] (Record) to resume recording, you erase the existing recording and start a new one.

5. After you finish recording, click [■] (Stop).
6. Click [▶] (Play) to hear the recording.

   Note

   You can repeat steps 1 through 6 until you are ready to save the recording.

7. When you're ready to save the recording, open the file menu and select Save, and then type a file name.

   Note

   Change drives and folders, as necessary, to save the file to the correct location. If you don't want to save the recording, record over it or close the file.

8. Click the OK button to save the file.

Using the Video File Player

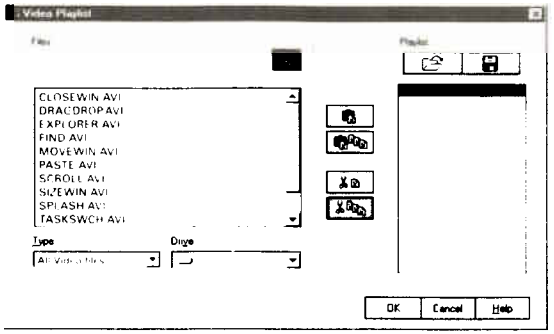
The Video File Player plays AVI (.AVI) and MPEG (.MPG and .DAT) videos on your Sony PC. You can use it to make playlists of your favorite videos to play during current and future viewing sessions. You can view playlists in a small window or in a full screen as a screen saver.

Creating Video Playlists

You can create a playlist of your favorite video files or of specific types of video files (such as movie clips or software demos).

To create and customize a video playlist

1. Click the Video File Player on the A/V Wall.
2. Click the PLAYLIST button to display the Video Playlist dialog box.



3 Select the video files you want to add to the playlist, changing drives and folders, as necessary:

Action	Procedure
Copy one file in the Names list to the playlist	Double-click the file, or select the file and then click (Add Selection).
Copy all files in the Names list to the playlist	Click (Add All Files).
Copy a range of files in the Names list to the playlist	Press the SHIFT key on the keyboard while clicking the first and last files in the range, and then click (Add Selection).
Copy selected files in the Names list to the playlist	Press the CTRL key on the keyboard while clicking each file, and then click (Add Selection).
Find all video files on the selected drive	Click (Search Selected Drive).

4 Click (Save File), and then type a file name.

Note

Change drives and folders, as necessary, to save the file to the correct location. The video playlist file extension defaults automatically to VVL.

5 Click the OK button to save the file.

Note

You can add video files to a playlist by opening the playlist and selecting the files you want to add. To remove files from a playlist, see "Removing Files from a Video Playlist" on page 77.

Other Video File Player Functions

Action	Procedure
Change between full-screen, auto-size, and user-size mode	Click SCREEN.
Stop full-screen play	Click anywhere on the screen.
Mute the sound	Click MUTE.
Stop play	Click (Stop).
Pause play	Click (Pause).
Go to the next video in the playlist	Click (Next).
Go to the beginning of the current video in the playlist	Click (Previous).
Rewind the current video	Click and hold (Rewind).
Fast forward the current video	Click and hold (Fast Forward).
Play the playlist videos in random order	Click SHUFFLE.
Adjust the volume	Drag the volume sliders on the Video File Player.
Play an intro to each file in the playlist	Click INTRO.
Play the current playlist files in the order in which they appear	Click CONTINUE.
Continuously play ("loop") the current playlist files in the order in which they appear	Click REPEAT.

Playing a Video Playlist

If you have more than one Video playlist, you must select which list you want to play. If you have only one playlist, just click [▶] (Play) on the Video File Player.

To play a video playlist

1. Click the Video File Player on the A/V Wall.
2. Click the PLAYLIST button to display the Video Playlist dialog box.
3. Click [📂] (Open File), and then select the file you want to open.

Note

Change drives and folders, as necessary, to select a file.

4. Click the OK button to open the file and return to the Video Playlist dialog box.
5. Click the OK button to return to the Video File Player.
6. Click [▶] (Play) to begin viewing the videos in the selected playlist.

Removing Files from a Video Playlist

If you don't want to view specific files in a Video playlist, you can remove them from the list.

To remove files from a video playlist

1. Click the Video File Player on the A/V Wall.
2. Click the PLAYLIST button to display the Video Playlist dialog box.
3. Select the video files you want to remove from the playlist:

Action	Procedure
Remove one file from the playlist	Select the file, and then click [🗑] (Delete Selection).
Remove all files from the playlist	Click [🗑] (Delete All Selections).

4. Click [💾] (Save File), and then type a new file name or select the name of the current playlist.
5. Click the OK button to save the file.

Note

If you selected the name of the current playlist, click the Yes button in the next dialog box, which asks whether you want to overwrite the file.

Using the Video CD Player

The Video CD Player plays CDs in the Video CD format, such as Karaoke and enhanced CDs.

To play a Video CD

1 Click the Video CD Player on the A/V Wall to display the Video CD Player and the viewing screen.

2 Click [⏏] (Eject) to open the CD tray.

3 Place a Video CD in the CD tray.

4 Gently push the CD tray to close it.

5 Click the LOAD button to play the video.

Note

Video CDs that include a player will play automatically.

6 If the video is interactive and asks you to make a choice, click a number on the Video CD Player numeric keypad to make your selection.

Other Video CD Player Functions

Action	Procedure
Select an option on the video screen	Click the numbered button that corresponds to your selection (for example, click ① to select 1).
Control an interactive sequence (selection function)	Click [▶] (Play).
Mute the sound	Click MUTE.
Stop play	Click [■] (Stop).
Pause play	Click [⏸] (Pause).
Resume play when the video is paused	Click [▶] (Play).
Go to the next track (interactive CDs only)	Click [⏭] (Next).
Go to the beginning of the current track (interactive CDs only)	Click [⏮] (Previous).
Rewind the current track	Click and hold [◀◀] (Rewind).
Fast forward the current track	Click and hold [▶▶] (Fast Forward).
Increase the volume	Click [+] (Volume Up).
Reduce the volume	Click [−] (Volume Down).
Return to a previous interactive menu	Click [↩] (Return).
Continuously play the Video CD	Click REPEAT.
Change the resolution for interactive video still pictures	Click SCREEN to toggle between HiRes (high resolution) and LoRes (low resolution).
Play the Video CD at approximately double speed	Click SEARCH.
Specify the output mode	Click CONFIGURE, and then click Mono or Stereo.
Specify the audio quality	Click CONFIGURE, and then select AM, FM, or CD in the Quality list.

Action	Procedure
Enable Karaoke mode for video CDs with Karaoke content	Click CONFIGURE, and then select the Karaoke check box.
Enable or disable the audio	Click CONFIGURE, and then, under Audio, select the Disabled check box.
Adjust the initial size of the video window	Click CONFIGURE, and then select the appropriate option from the Open Size list.
Adjust the display rate	Click CONFIGURE, and then select the appropriate option from the Display list.
Enable or disable synchronized video playback	Click CONFIGURE, and then select the Synchronized Playback check box.
Enable or disable the video	Click CONFIGURE, and then, under Video, select the Disabled check box.
Reset the configuration defaults	Click CONFIGURE, and then click the Default button.
Change the CPU resources dedicated to running the video	Click CONFIGURE, and then drag the scroll box in the CPU area.
Specify the audio mode	Click AUDIO until the mode you want appears in the video window (Mono, Stereo, Left, or Right).
List information about the CD	Click CD INFO.
Open or close the CD tray	Click [▲] (Eject).

Notes

Click the OK button to save any configuration changes you make in the Configuration window.

For additional information about how to use these functions, see the online help.

Using More A/V

More A/V displays additional software titles that came with your Sony PC. You can add your own audio/video titles for quick access. For information on adding software to the More A/V area, see "Adding and Removing Applications in VAIO Space" on page 30.

To run a program from More A/V

1. Click More A/V on the A/V Wall.
2. Double-click the application you want to run.

Getting Help

Sony provides several support options for your Sony PC. When you have questions about your PC and the preinstalled software, check these places for answers:

- **This guide** explains how to set up and upgrade your computer, use VAIO Space and the A/V Suite software, and perform basic computer tasks.
- **The online *System Reference Manual*** provides detailed information about the hardware in your Sony PC, as well as how to setup and upgrade your system. You can access the online *System Reference Manual* from the Start menu.
- **The other manuals and online help files** that may accompany your preinstalled software contain instructions on using these titles. Some applications include a printed manual, but most of the manuals are located on your hard disk drive as online help files. You can access the online help files from the Sony Folder on the Start menu or from the Help menu in the specific application.
- **The *About Your Sony PC* guide** lists the telephone support numbers for your preinstalled software titles. This guide also includes a packing list and technical specifications for your Sony PC.
- **The Sony Sales and Marketing Support number** offers information about your Sony PC and other Sony products that work with your PC. To contact Sony Sales and Marketing Support, call 1-888-4SONYPC (1-888-476-6972).
- **The Sony Fax-back service** provides you with answers to commonly asked questions. You can use this automated service to request a list of available topics and then select the topics that you want to receive. To contact the Sony Fax-back service, call 1-888-4SONYPC (1-888-476-6972).
- **The Sony e-mail support service** answers your questions by electronic mail. Just send your question in an e-mail message, and a Customer Service Representative will send you a reply with the answer. To send a question to Sony e-mail support, address the message to SOS@info.sel.sony.com.

- **The SOS software** connects you to a Customer Support Representative. SOS is available toll-free 24 hours a day, seven days a week.You can contact SOS by telephone or by using your built-in modem. Be sure to connect your modem before you call, so that the representative can access your system if necessary. For information on calling SOS with your built-in modem, see the next section, "Calling SOS." To call SOS using your telephone, dial 1-888-4SONYPC (1-888-476-6972).
- **The SOS Oil Change**™ software is a useful companion to SOS. Using the Internet, it provides the latest device drivers, software fixes and updates selected by Sony for the software titles included with your Sony PC. SOS Oil Change scans your PC to identify software applications and their versions. It then logs on to the Internet, compares your software configuration against the Sony database, and notifies you of the software fixes and updates available for your PC. For each fix and update, it provides an explanation. After selecting the software fixes and updates you require, SOS Oil Change downloads, uncompresses and installs the selected items. If, for any reason, the new software/device driver is not installed successfully, your current configuration will be retained. To contact SOS Oil Change support dial 1-888-4SONYPC (1-888-476-6972).

Calling SOS

The SOS application enables you to exchange information with a Sony Customer Support Representative (CSR). Using the built-in speakerphone is the most convenient way to contact SOS. Here's how it works:

- Type your name and a description of the problem in the SOS window
- Dial the SOS hotline with a single click of the mouse
- Specify the access level for the CSR
- The CSR resolves the problem

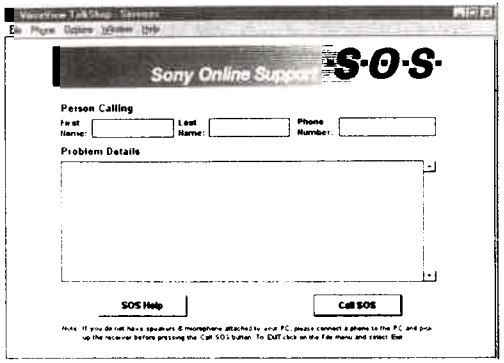
Before using SOS, make sure the PC is connected to a phone line as described in "Connecting the Phone Line and Phone" on page 11. If you do not have a phone line connected to your PC, you can call SOS by dialing 1-888-4SONYPC (1-888-476-6972).

Note

If you call SOS using the speakerphone and you need to reboot your PC, you will lose your connection to SOS. For this reason, it is recommended that you connect a regular telephone to the Sony PC as described in "Connecting the Phone Line and Phone" on page 11. You can then take the receiver off the hook to maintain the connection while you reboot the PC.

To place a call to SOS

1. Click the SOS icon in the VAIO Space Sky, or select SOS from the Sony Folder on the Start menu.



2. In the SOS window, type your name, phone number, and a description of the problem.
3. Call SOS:
   - If you are using the built-in speakerphone, click the Call SOS button.
   - If you are using a regular telephone that you connected to your PC, remove the phone from the receiver, and then click the Call SOS button.

4 When the Remote Command Security dialog box appears, select an access level by clicking one of these options:

Option	Description
Full access	Allows the CSR to fully interact with your PC. The CSR can access all the files on your hard disk drive and can copy files to and from your PC to solve your problem.
Limited access	Lets the CSR view your system, but you must approve every action the CSR takes. If the CSR wants to copy a file, for example, the Remote Command Permission dialog box prompts you to approve this action.
No access	Prevents the CSR from accessing your system. You must perform all the operations as described to you by the CSR.

Note

You can change the access level during your call to SOS.

5 Discuss the problem with the CSR and follow the CSR's instructions to resolve the problem.

Notes

If you experience difficulty hearing the CSR, turn down the speaker volume or pick up the receiver of the telephone attached to your PC's modem.

You may hear beeps on the line as the system switches between voice and data modes. You can ignore these beeps.

When a file is being transmitted between your PC and SOS, a status box displays the progress of the file transfer.

6 To end a call placed with the speakerphone, click the SpeakerPhone button. Otherwise, just hang up the phone when you finish a call.

7 Click the Close box at the top right corner of the SOS window or select Exit from the File menu to close the SOS window.

Troubleshooting

This section describes how to solve common problems you may encounter when using your PC. Many problems have simple solutions, so try these suggestions before you call Sony Online Support. For more advanced troubleshooting information, see the online *System Reference Manual*.

My PC won't start

- Check that the PC is plugged into a power source and that it is turned on. Check that the power light is lit on the front panel of the PC.
- Make sure a diskette is not in the diskette drive.
- Confirm that the power cord and all cables are connected firmly, as described in the "Setting Up Your Sony PC" chapter.
- If you plugged the PC into a power strip or UPS, make sure the power strip or UPS is turned on and working.
- Check that the display is plugged into a power source and turned on. Check that the brightness and contrast controls are adjusted correctly. See the manual that came with your display for details.

My PC "locks up"

- Try restarting the PC. On the Windows taskbar, click the Start button, click Shut Down, and then click Restart the computer.
- If you cannot restart as described in the preceding step, you can restart the PC by pressing CTRL+ALT+DELETE.

Caution

Pressing CTRL+ ALT+DELETE may result in losing changes made to files that are currently open.

My CD-ROM drive tray won't open

- Make sure the PC is turned on.
- Press the Eject button on the CD-ROM drive.
- If the Eject button does not work, you can open the CD tray by inserting a straightened heavy-weight paper clip into the hole beside the Eject button.

I cannot play a CD-ROM disc

- Make sure you place the disc in the tray with the label side facing up.
- Make sure the CD-ROM software is installed according to the program's instructions.

I installed a new application, and I can't find it in VAIO Space

- After you install a new application, you need to add it to VAIO Space. See "Adding and Removing Applications in VAIO Space" on page 30 for details.

When I double-click an application icon, a message such as "You must insert the application CD into your CD-ROM drive" appears and the software does not start

- Some titles require specific files that are located on the application's CD-ROM disc. Insert the disc and try starting the program again.
- Check to make sure you inserted the CD-ROM disc with the label side facing up.

My software program "locks up" or crashes

- Contact the software publisher or designated provider for technical support. See the *About Your Sony PC* guide for a complete list of phone numbers.

My speakers have no sound

- Check that the speakers are plugged into the **HEADPHONES** connector. See "Connecting the Sony Multimedia Computer Display" on page 7 or "Connecting a Display, Speakers, and a Microphone" on page 8 for details.
- If the speakers have a mute button, make sure it is off.
- If the speakers are powered by batteries, check that the batteries are inserted properly and that they are charged.
- If the speakers use an external power source, make sure that the power cord is plugged into a grounded wall outlet or power strip.
- If the speakers have their own volume control, check the volume level.

- If the program you are using has its own volume control, check that the volume is turned up.
- Check the volume controls in the application, in the Sony A/V Suite Mixer, and in Windows 95.

My modem doesn't work

- Check that the phone line is plugged into the **LINE** jack. See "Connecting the Phone Line and Phone" on page 11 for details.
- Check that the phone line is working. You can check the line by plugging in an ordinary phone and listening for a dial tone.
- Check that the phone number the program is dialing is correct.
- Check that the software you are using is compatible with the Sony PC modem. (All preinstalled programs are compatible.) Call the software publisher or Sony Online Support.

My microphone doesn't work

- Check that the microphone is plugged into the **MIC** connector. See "Connecting the Sony Multimedia Computer Display" on page 7 or "Connecting a Display, Speakers, and a Microphone" on page 8 for details.

My mouse doesn't work

- Check that the mouse is plugged into the **MOUSE** connector. See "Connecting the Keyboard and Mouse" on page 10 for details.
- There may be dust or dirt inside the mouse mechanism. To clean the mouse, follow these steps:
  - Turn off your PC. See "Shutting Down Your Sony PC" on page 39 for details.
  - Remove the mouse ball cover on the back side of the mouse.
  - Turn the mouse upright, and drop the mouse ball into your hand.
  - Using a piece of tape, remove any dust or dirt on the mouse ball and inside the mouse ball socket.
  - Return the mouse ball to the socket, and replace the mouse ball cover.

My keyboard doesn't work

- Check that the keyboard is plugged into the **KEYBOARD** connector. See "Connecting the Keyboard and Mouse" on page 10 for details.

I can't find the Windows 95 taskbar

- Use the mouse to point to the bottom of the screen below the VAIO Space Floor area. The taskbar should come into view.
- If you still don't see the taskbar, someone may have changed the taskbar's position. Point to the left, right, and top edges of the screen.

I can't make the VAIO Space wall that I want to use rotate into view

- Point to the wall you want to use, wait for the green arrow to appear, and then click the wall.

I can't use two different applications at the same time in VAIO Space

- Click the Settings icon on the VAIO Space Floor. Under VAIO Space Setting, select VAIO background mode.

Using the Recovery CD

You can restore the software titles on your computer if they become corrupted or accidentally erased. The Recovery CD contains a backup copy of the software originally installed on your hard disk drive. **It can be used only to restore the hard disk of the Sony PC you purchased.** You can choose to:

- Restore all the software titles that originally came with your computer without formatting the hard disk
- Format the hard disk drive and then restore all the original software
- Selectively restore or selectively install certain individual applications. The selective restore option restore files as they originally shipped on your PC. The selective install option allows you to configure an application according to your preferences.

Caution

⚠ *Formatting the hard disk drive removes all the information on the hard disk. If you choose this option, you will lose any software you've installed and any other files you've created since you started to use your computer. This means you will have to reinstall any applications that were not included with the computer when you purchased it. If you choose to restore all software titles without formatting the hard disk drive, you may need to reinstall applications that were not included with the computer when you purchased it. If you have any questions on using the Recovery CD, contact Sony Online Support (SOS).*

To use the Recovery CD

1. Insert the Sony PC Recovery CD in the CD-ROM drive.
2. Shut down your PC as described on page 39.
3. Wait 30 seconds and turn on your PC.
4. Click OK on the Welcome screen.
5. When the Recovery menu appears, follow the on-screen instructions to complete the recovery process.

Upgrading and Maintaining Your Sony PC

In the future you may want to install additional boards to expand the functionality of your PC. This section describes how to open your PC and insert add-in boards, add memory, and replace the cover. This section also explains how to change the lithium battery. For more information on upgrading your Sony PC, see the online *System Reference Manual*.

The procedures in this section assume that you are familiar with the general terminology associated with personal computers and with the safety practices and regulatory compliance required for using and modifying electronic equipment. Read "Notes on Use" on page 113 before upgrading your Sony PC.

Caution

⚠ *Always switch the power off before you open the system or connect your PC to peripheral equipment; otherwise, damage may occur to the integrated circuits in your PC.*

Electrostatic discharge (ESD) can damage disk drives, add-in cards, and other components. Do the procedures described here only at an ESD workstation. If such a station is not available, do not work in a carpeted area and do not handle materials that produce or hold static electricity (cellophane wrappers, for example). Ground yourself by maintaining continuous contact with an unpainted metal portion of the chassis while performing the procedure.

Removing the Cover

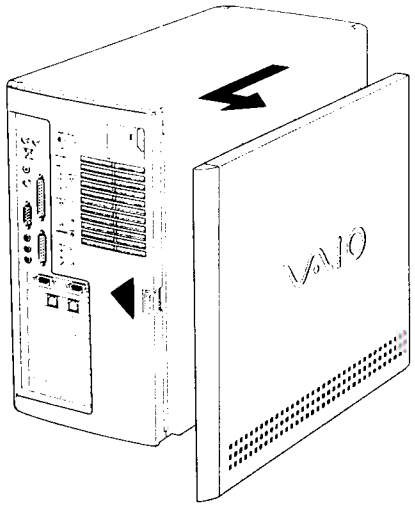
To insert an add-in board, add memory, or replace the lithium battery, you need to open your Sony PC. You must remove the panels in a specific order: the left side panel, the rear panel, and the I/O bracket.

Note

When replacing the lithium battery, you must perform some initial steps before removing the cover. See "Replacing the Lithium Battery" on page 101 for details.

To remove the left side panel

1. Push the rear latch to release the left side panel.
2. Slide the panel back until it stops.
3. Pull the panel straight out to remove it.

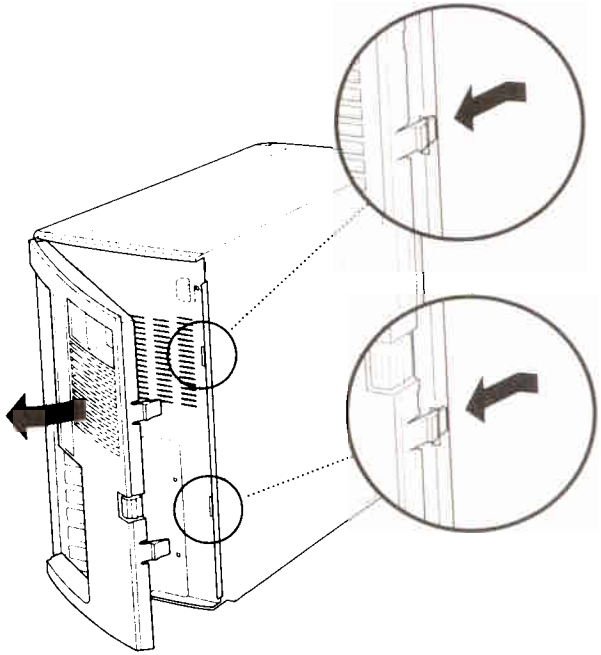


To remove the rear panel

Note

You do not need to remove the rear panel to replace the lithium battery.

- Push the tabs to unsnap and remove the rear panel.

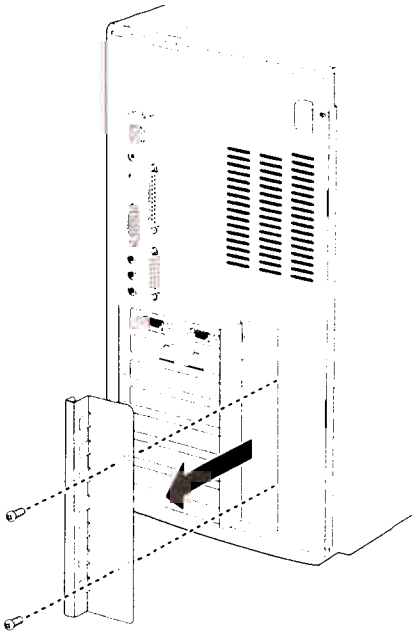


To remove the I/O bracket

Note

You do not need to remove the I/O bracket to add memory or replace the lithium battery.

❑ If you are installing or removing an add-in board, unscrew the I/O bracket.



Inserting an Add-in Board

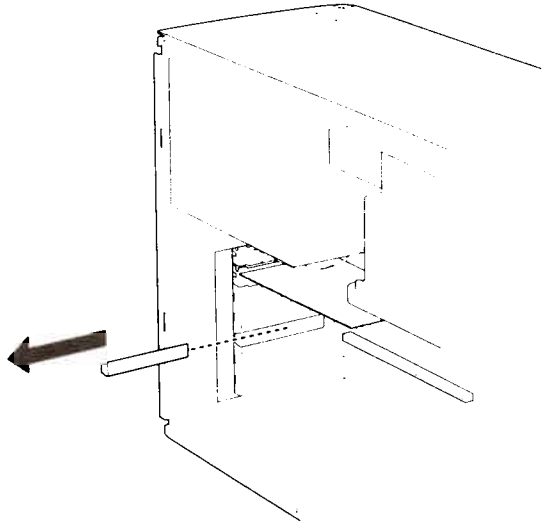
You can add ISA or PCI boards to the system. After removing the side and rear panels and the I/O bracket, identify the connector where you want to insert the add-in board.

Caution

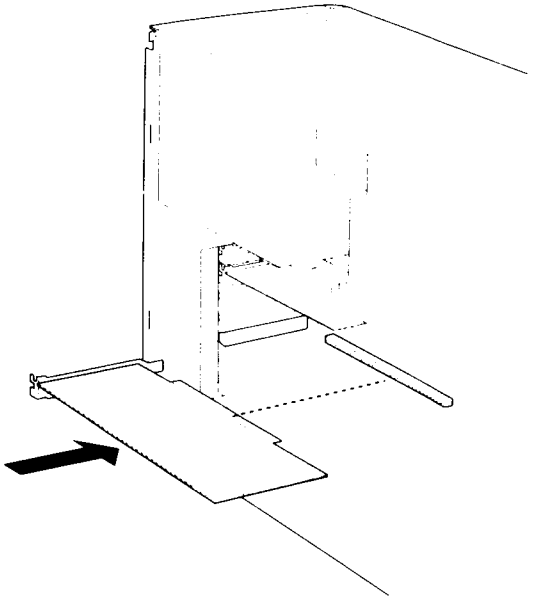
⚠ *Make sure you observe the proper safety precautions when you add boards to your Sony PC. See "Notes on Use" on page 113.*

To insert an add-in board

1. Shut down your PC and turn off all peripheral devices, such as your printer, display, and speakers.
2. Unplug your PC.
3. Remove the side and rear panels and the I/O bracket as described on page 94.
4. Carefully remove the slot cover for the slot you have chosen.



5 Install the add-in card by plugging it into the connector on the system board. Attach any internal cables that the board requires (see the manual for the add-in card).



6 Replace the cover as described on page 103.

Adding Memory

You can install additional SIMMs (single in-line memory modules) in your PC, to a maximum of 128 megabytes (MB).

Note

You must install SIMMs in pairs. Fill each memory bank with SIMMS of the same type (Fast Page or EDO), speed (60 ns), and size (4, 8, 16, or 32 MB).

Total System Memory	Memory in Bank 0*		Memory in Bank 1*	
	Socket 1	Socket 2	Socket 1	Socket 2
32 MB*	16 MB	16 MB	Empty	Empty
40 MB	16 MB	16MB	4 MB	4 MB
48 MB	8 MB	8 MB	16 MB	16 MB
64 MB	16 MB	16 MB	16 MB	16 MB
64 MB	32 MB	32 MB	Empty	Empty
72 MB	32 MB	32 MB	4 MB	4 MB
80 MB	8 MB	8 MB	32 MB	32 MB
96 MB	16 MB	16 MB	32 MB	32 MB
128 MB	32 MB	32 MB	32 MB	32 MB

* *32 MB is the default memory amount for PCV-100 and PCV-120.*

* *The memory options in Bank 0 and Bank 1 are interchangeable.*

Caution

⚠ *Make sure you observe the proper safety precautions when you add SIMMs to your Sony PC. See "Notes on Use" on page 113.*

To install memory

1 Shut down your PC and turn off all peripheral devices, such as your printer, display, and speakers.

2 Unplug your PC.

3 Remove the side and rear panels as described on pages 94-95.

4 If necessary, remove any add-in cards or other components to access the SIMM sockets.

5 Handle the SIMM only by the edges, and remove it from its anti-static package.

Removing a Slot Cover

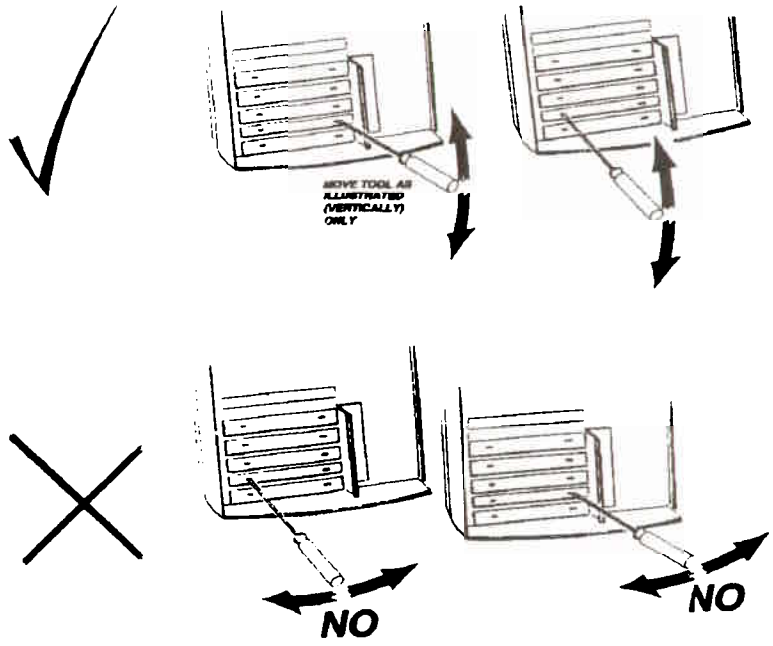
1. From the rear of the system, insert a 3/16-in. screw driver into the RIGHT hole in the slot cover.

2. Gently move the screw driver up and down.

   Repeat until the attachment point above the hole breaks free. (You will feel the metal snap and hear a pop when the attachment points break - this is normal.)

3. Move the screw driver to the LEFT hole in the slot cover. Move the screwdriver down first, then up.

   Repeat until the two remaining attachment points break free.



4. Remove the slot cover when it breaks free.

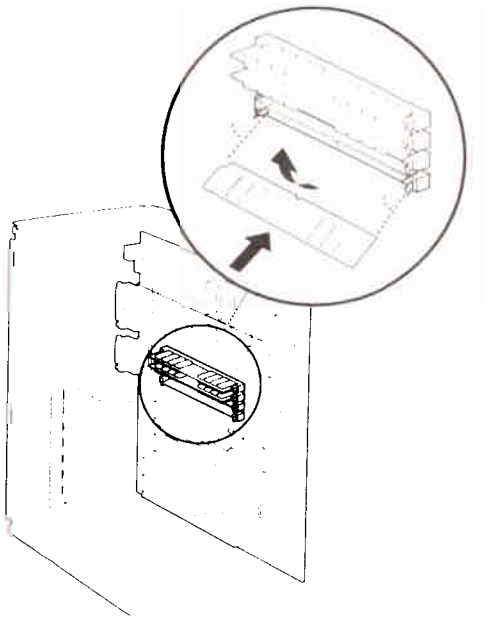
5. Discard the slot cover.

6 Hold the SIMM with the chips face up and align the SIMM over the SIMM socket as shown.

7 Firmly insert the SIMM at an angle into the bottom edge of the SIMM socket. Press evenly against the edge of the SIMM as you raise it into the SIMM socket.

Caution

⚠ *To avoid damaging the SIMM socket, move the SIMM socket tabs slightly outward to relieve pressure. The SIMM should then click easily into place.*



8 Reinstall any add-in cards or components you removed.

9 Replace the side and rear panel as described on page 103.

Replacing the Lithium Battery

After several years, when the lithium battery starts to weaken, the system settings stored in CMOS RAM, such as the date and time, may be wrong. When this occurs, you need to replace the lithium battery.

To replace the lithium battery

1 To run the Setup utility, press F3 for a few seconds while rebooting your PC, then press and hold F1 to run the BIOS setup utility.

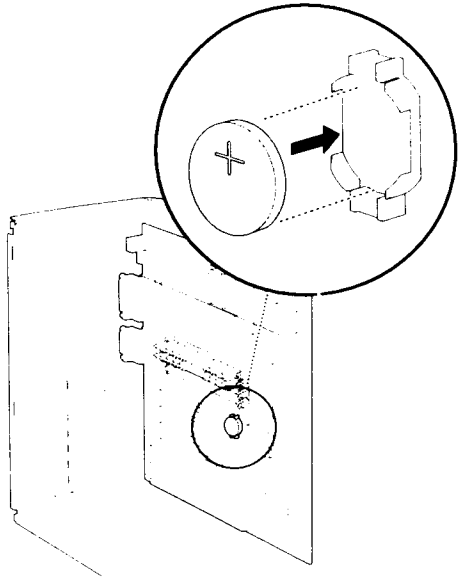
2 Write down the current BIOS Setup options.

3 Shut down your PC and turn off all peripheral devices, such as your printer, display, and speakers.

4 Unplug your PC.

5 Remove the side panel as described on page 94.

6 If necessary, remove any add-in cards or other components to access the CMOS battery socket, and gently pry the battery from the socket.



7 Install the new battery with the plus (+) side up.

WARNING

There is danger of explosion if you replace the battery incorrectly. You must replace the battery only with a CR2032 type lithium battery. Discard used batteries according to the instructions on page 114.

8 Reinstall any add-in cards that were removed, and replace the side panel as described on page 105.

Note

The values stored in the CMOS memory are now reset to the factory default values. You must run the Setup utility to reset the date, time, passwords, and other options. See the online System Reference Manual *for details.*

9 To run the Setup utility, press F3 for a few seconds while rebooting your PC, then press and hold F1 to run the BIOS setup utility.

10 Change the default values to the values you wrote down in step 2.

11 Save your Setup changes, and then exit the Setup utility.

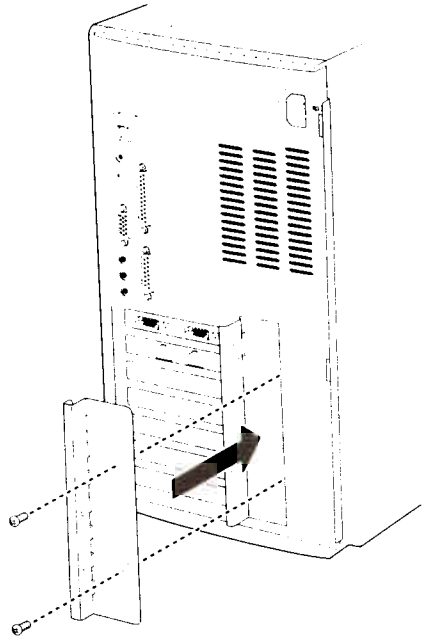
Replacing the Cover

Replace the panels in the following order:

To replace the cover

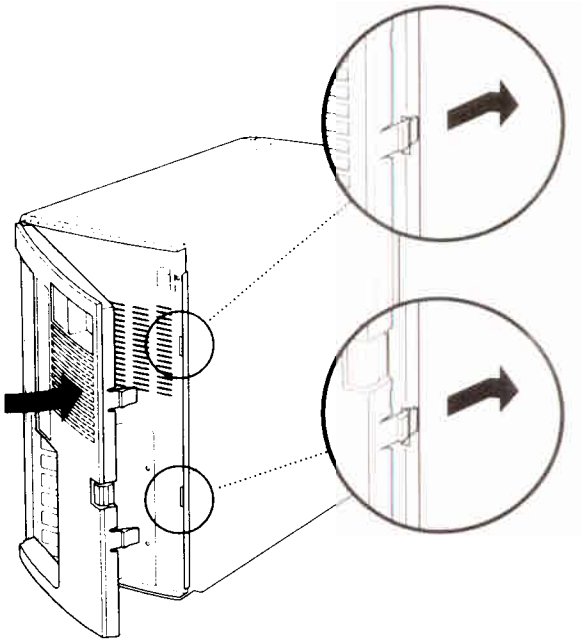
1 Replace the I/O bracket.

Use the two screws to hold it in place.

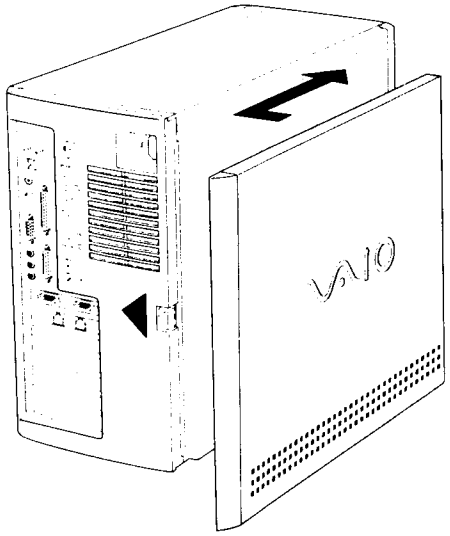


2 Replace the rear panel.

Make sure the tabs snap into place.



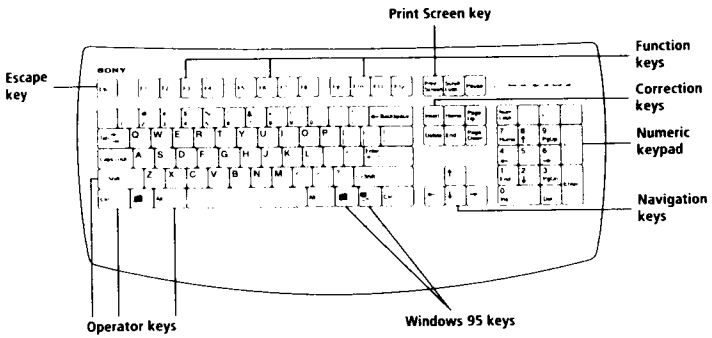
3 Replace the side panel.



Computer Basics

Using the Keyboard

Your keyboard is very similar to a typewriter's, but the keyboard has additional keys that perform specific computer-related tasks.



Key	Description
Numeric keypad	Contains the keys found on a typical calculator. Use the numeric keypad to type numbers or to perform mathematical calculations such as addition and subtraction. Note that you must press NUM LOCK to activate the numeric keypad. (When you do so, the Num Lock light will be on.)
Navigation keys	Several keys are devoted to moving the cursor on the screen (the four arrow keys and the HOME, END, PAGE UP, and PAGE DOWN keys). These keys are also available on the numeric keypad when Num Lock is turned off.
Correction keys	The INSERT and DELETE keys enable you to make corrections in your documents. These keys are also available on the numeric keypad when Num Lock is turned off.

Key	Description
Function keys	The twelve function keys along the top of the keyboard are used to perform designated tasks. For example, in many applications, F1 is the Help key. The task associated with each function key may vary from one application to the next.
Escape key	The ESC (Escape) key is used to cancel commands
Print Screen key	The PRINT SCREEN key takes an electronic snapshot of the screen and places it in the Windows Clipboard. You can then paste the screen shot into a document and print it.
Operator keys	Several keys are always used with at least one other key: CTRL, ALT, and SHIFT. When held down with another key, the CTRL (Control) and ALT (Alternate) keys offer another way to give commands. For example, in many applications, instead of choosing the Save command from a menu, you can hold down CTRL and press S (referred to as CTRL+S). The SHIFT key operates the same way as on a typewriter; it's used to produce capital letters or special symbols such as @ and $.
Windows 95 keys	The keys with the Windows logo display the Windows 95 Start menu; it's the equivalent of clicking the Start button on the taskbar. The Applications key displays a shortcut menu of context-sensitive choices; pressing this key is the equivalent of clicking the right mouse button.

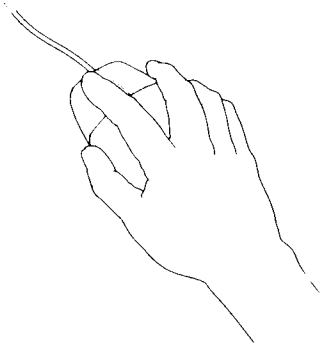
The keyboard also has three lights:

Light	On	Off
Num Lock	The number keys on the numeric keypad are active.	The arrow keys, navigation keys, and correction keys on the keypad are active.
Cap Lock	Letters appear in uppercase as you type. The SHIFT key lowers the case of typed letters when Cap Lock is on.	Letters appear in lower case as you type (unless you hold down the SHIFT key).
Scroll Lock	The screen scrolls differently. (Exactly how it scrolls depends on the specific application. It has no effect in many applications.)	Information moves across the display normally.

Using the Mouse

Using a mouse may be difficult at first, but after you become comfortable using it, you can save a lot of time. The following terms are commonly used to describe actions you perform with a mouse.

Term	Description
Point	Place the mouse pointer on an item or object.
Click	Press and release the left mouse button, without moving the mouse.
Double-click	Press the left mouse button two consecutive times, without moving the mouse.
Right-click	Press the right mouse button. In many applications, this action displays a shortcut menu of context-sensitive choices.
Drag	Hold down the left mouse button and then move the mouse in the desired direction. This action is used to select text and move objects.



Setting Up the Mouse for Left-Hand Use

You can control the mouse with your right or left hand. When you use the mouse with your left-hand, you may find it easier to reverse the button functions. When the functions are reversed, the right mouse button is used for normal clicking and dragging, and the left button is for displaying shortcut menus (right-clicking).

To set up the mouse for left-hand use

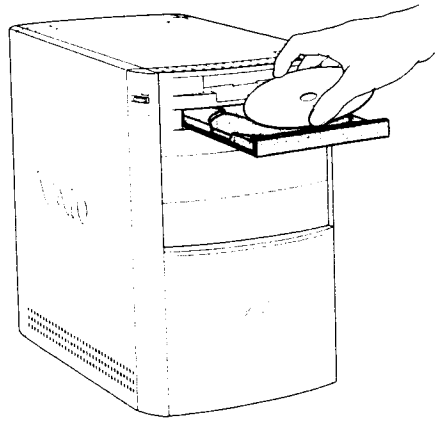
1. Click the Start button to display the Start menu.
2. Point to Settings.
3. Click Control Panel.
4. Double-click the Mouse icon.
5. Click the Buttons tab.
6. Under Buttons, select Left-handed.
7. Click the OK button to close the Mouse Properties dialog box.

Using the CD-ROM Drive

To use the CD-ROM drive, you must open the front panel. See "Accessing the CD-ROM and Diskette Drives" on page 23 for details.

To use the CD-ROM drive

1. Press the Eject button on the front panel of the PC to open the CD-ROM drive. The CD tray slides out.
2. Place the CD-ROM disc in the tray with the label side facing up.
3. Close the tray by pushing it gently or by pressing the Eject button.

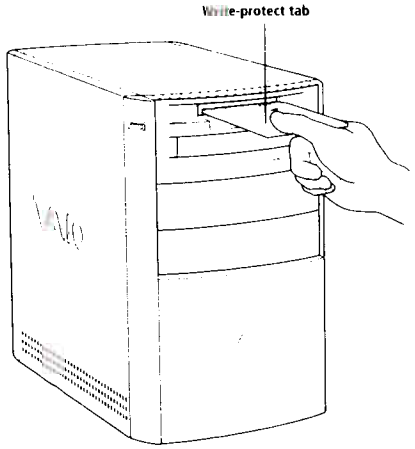


Using the Diskette Drive

To use the diskette drive, you must open the front panel. See "Accessing the CD-ROM and Diskette Drives" on page 23 for details. Most diskettes contain a write-protect tab. The write-protect tab prevents accidental changes to a diskette. When the hole is open, the diskette is write-protected—you can't delete, copy, or save information on the diskette. When the hole is closed, you may write to or modify the diskette contents. Just slide the write-protect tab to open and close the hole.

To use the diskette drive

1. Hold the diskette with the label side facing up.
2. Gently push the diskette into the drive until you hear it click into place.
3. After you finish using the diskette, press the Eject button on the diskette drive to remove the diskette.



Other Information

Notes on Use

On the Power Source

- Your PC operates on 100–120 V AC 50/60 Hz for North American countries.
- Be sure to set the voltage setting switch to the correct setting before turning on the power; otherwise damage may occur.
- The total power draw of installed add-in cards must not exceed the specifications for the power supply. Do not overload the system by installing add-in cards that draw excessive current. The system is designed to provide 2 amps (average) of 5V power for each card in the system not to exceed a total of 12 amps. The total 5V current draw in a fully-loaded system (with all the add-in card slots filled) must not exceed 12 amps. If you add components to the system that draw current from the power supply, the total combined +3.3V and +5V currents must not exceed 80 watts.
- Plug all the power cords for your PC and its peripheral equipment into the same AC supply line. AC derived from different supply lines may result in voltage differences that can cause unstable operation or unwanted weak currents at the time of connection.
- Do not share the AC outlet with any other power-consuming equipment, such as copying machines or shredders.
- You can purchase a power strip with a surge protector. This device prevents damage to your PC caused by sudden power surges such as those that may occur during an electrical storm.
- If you live in an area that experiences frequent power fluctuations, you may want to purchase a UPS (Uninterrupted Power Supply). This device contains both a surge protector and a battery backup. The surge protector prevents damage to your PC caused by power surges. The battery backup safeguards your data during a brief period of power loss.

- Do not place heavy objects on the power cord.
- Do not operate the system with the cover removed. Always reinstall the cover before turning on the system.
- To disconnect the cord, pull it out by the plug. Never pull the cord itself.
- Unplug your PC from the wall outlet if you will not be using the PC for a long time.
- The power control button on the front panel does not turn off the system AC power. To remove power from the system, you must shut down the PC as described in this manual and then unplug the AC power cord from the wall outlet or power strip.
- Before touching anything inside the computer, turn the system off and let it cool for ten minutes. This will ensure that the processor heat sink will not be hot.
- Do not attempt to open the power supply. There are no user-serviceable parts in the power supply. To avoid personal injury or damage to your equipment, refer the repair or replacement of the power supply to qualified personnel only.

On Disposal of the Lithium Battery

- Dispose of the lithium battery properly. In some areas, the disposal of lithium batteries in household or business trash may be prohibited. You can return your unwanted lithium batteries to your nearest Sony Service Center or Factory Service Center. For the Sony Service Center nearest you, call 1-800-222-SONY (1-800-222-7669).

Caution

⚠ *Do not handle damaged or leaking lithium batteries.*

WARNING

⚠ *The lithium battery may explode if mistreated. Do not disassemble it or dispose of it in fire.*

Replace the battery with a Sony CR2032 lithium battery. Using a type of battery other than a CR2032 may present a risk of fire or explosion.

On Handling

- Clean the cabinet with a soft, dry cloth or a soft cloth lightly moistened with a mild detergent solution. Do not use any type of abrasive pad, scouring powder, or solvent such as alcohol or benzine, as it may damage the finish of your Sony PC.
- Should any solid object or liquid fall into the cabinet, keyboard, or mouse, shut down your PC and then unplug it. You may want to have the PC checked by qualified personnel before operating it any further.

On Installation

- Do not place your Sony PC in a location subject to:
  - Heat sources, such as radiators or air ducts
  - Direct sunlight
  - Excessive dust
  - Moisture or rain
  - Mechanical vibration or shock
  - Strong magnets or speakers that are not magnetically shielded
  - Ambient temperature of more than 95°F (35°C) or less than 50°F (10°C)
  - High humidity
- Do not place electronic equipment near your PC. The PC's electromagnetic field may cause a malfunction.
- Provide adequate air circulation to prevent internal heat build-up. Do not place your PC on loose surfaces (such as rugs or blankets) or near materials (such as curtains or draperies) that may block its ventilation slots. Leave a space of at least 8 inches from the back panel of your PC.
- The PC uses high-frequency radio signals and may cause interference to radio or TV reception. Should this occur, relocate the PC a suitable distance away from the set.
- Use only specified peripheral equipment and interface cables; otherwise, problems may result.
- Do not use cut or damaged connection cables.

- Always switch the power off before connecting your PC to peripheral equipment; otherwise, damage may occur to the integrated circuits in your PC.
- Your PC, keyboard, and mouse consist of high-precision electronic parts. Do not drop them or bump them against other objects.
- Your Sony PC will not work with party lines, cannot be connected to a coin-operated telephone, and may not work with multiple phone lines or a private branch exchange (PBX).
- If the telephone company makes a service call to your home or office and determines that your PC is responsible for the problem, the telephone company may bill you for the service call. Also, if you do not disconnect your PC when it is adversely affecting the telephone line, the telephone company has the right to disconnect your service until you correct the problem.

On Moisture Condensation

If your PC is brought directly from a cold location to a warm one, moisture may condense inside your PC. In this case, allow at least an hour before turning on your PC. If any problem occurs, unplug your PC, and contact your Sony Service Center.

On Upgrading the System

- The procedures described in the "Upgrading and Maintaining Your Sony PC" section in this manual assume familiarity with the general terminology associated with personal computers and with the safety practices and regulatory compliance required for using and modifying electronic equipment.
- Disconnect the system from its power source and from any telecommunications links, networks, or modems before you open the system or do any of the procedures described in the "Upgrading and Maintaining Your Sony PC" section in this manual. Failure to do so may result in personal injury or equipment damage.

- Electrostatic discharge (ESD) can damage disk drives, add-in cards, and other components. Do the procedures described in the "Upgrading and Maintaining Your Sony PC" section only at an ESD workstation. If such a station is not available, do not work in a carpeted area, and do not handle materials that produce or hold static electricity (cellophane wrappers, for example). Ground yourself by maintaining contact with an unpainted metal portion of the chassis while performing the procedure.
- When removing a slot cover, be careful not to damage components on the system board or add-in cards. You may need to temporarily remove add-in cards that are next to the slot cover you want to remove.

On Using the Hard Disk Drive

- Do not place the PC in a location that is subject to vibration or shock.
- Do not move the PC during operation.
- Do not subject the PC to sudden changes in temperature.
- Do not turn off the power while the PC is accessing the hard disk drive.

On Handling Diskettes

- Do not open the shutter manually and touch the surface of the diskette.
- Keep diskettes away from magnets.
- Keep diskettes away from direct sunlight and other heat sources.

On Handling CD-ROM Discs

- Do not touch the surface of the disc.
- Do not drop or bend the disc.

On Cleaning CD-ROM Discs

- Fingerprints and dust on the surface of a disc may cause read errors. Proper care of the disc is essential to maintain its reliability. Do not use solvents such as benzine, thinner, commercially available cleaners or anti-static spray, as they may cause damage to the disc.
- For normal cleaning, hold the disc by its edge and use a soft cloth to wipe the surface from the center out.
- If the disc is badly soiled, moisten a soft cloth with water, wring it out well, and use it to wipe the surface of the disc from the center out. Wipe off any remaining moisture with a dry soft cloth.

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1-3. Sony Video Phone

(Copied from "Sony Video Phone (3-859-619-11)".)

Sony Video Phone (Receive-Only)

What Can You Do with Receive-Only Video Phone?

Receive-Only Video Phone lets you talk to someone over the phone and see that person while you talk. To do this, the connected party's computer must have Video Phone (or a compatible product) and a video camera option.

The connected party won't be able to see you because your computer does not have the equipment (such as a camera) to send video.

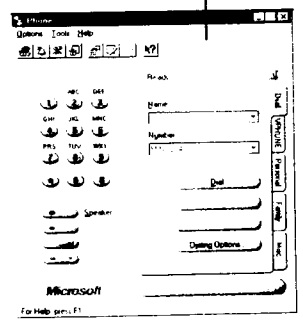
To make a video call, you need to use two computer programs:

Use **Receive-Only Video Phone** to see the other party.

To start Receive Only Video Phone, click the Start button in the lower left corner of your screen. Then select Programs and Sony Video Phone.

The My Video window indicates Receive-Only.

Use **Microsoft® Phone** for voice communication.



Receive-Only Video phone also provides a way for you to receive still video images, called snapshots, while talking with the other party.

Things to Know Before Making a Call

When you open Microsoft Phone for the first time, you are guided through a series of dialog boxes to configure Microsoft Phone and Fax. Follow the on-screen instructions.

Call Waiting telephone service will terminate video transmission. Ask your local phone company for the numbers needed to disable Call Waiting. Then, open Microsoft Phone and select Dialing Properties in the Tools menu. Select the "This location has call waiting" checkbox. Then enter the numbers required to disable call waiting.

While the video is connecting, you are unable to talk to or hear the other party for approximately 10-15 seconds. After the video connection is established, you can resume your conversation.

Making and Receiving a Call

Making a Call

After starting Video Phone, a video call is a two-part process:

- Use **Microsoft Phone** to establish a voice call using your computer's speakers and microphone.
- Use **Receive-Only Video Phone** to see the other party's video.

1 Open **Receive-Only Video Phone** by clicking the **Start** button in the lower, left corner of your screen. Then select **Programs** and **Sony Video Phone**.

2 Click the **Dialer** button in the Video Phone window. This launches Microsoft Phone. (The button changes to Start Video.)

3 Use **Microsoft Phone** to call the other party.

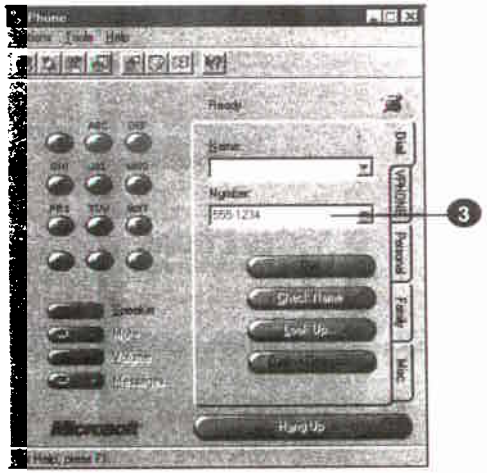
- Type the number in the **Number field**, or use the quick dial list or phone book.
- Click the **Dial** button.

4 When the other party answers, tell the party that you'd like to receive their video.

5 Click the **Start Video** button on Receive-Only Video Phone, *or* ask the other party to click Start Video.

If both parties click Start Video, the connection attempt will fail.

After ten to 15 seconds, you see the other party's video appear in the Guest Video window.



Answering a Call

You can answer an incoming call on any telephone in the house and then transfer the call to your computer.

1 When your telephone rings:

If you *are* at your computer:

- Open **Microsoft Phone**.
- Click the **Answer** button to answer the telephone.

If you're *not* at your computer:

- As usual, answer by picking up any phone in the house. The caller informs you that video is to be sent.
- Leave the receiver off hook.
- Go to your computer and start **Microsoft Phone**.
- Click the **Speaker** button in Microsoft Phone to resume the call.
- Hang up the other phone before continuing.

2 Open **Receive-Only Video Phone**. Let the other party click Start Video.

If both parties click Start Video during the same video connection attempt, the connection attempt will fail.

3 Click **Yes** to receive the video. You see the person who called you in the Guest Video window.

Getting Privacy

You may find times during a video call when you want temporary privacy.

To mute audio, click the Mute button in Microsoft Phone. The other party cannot hear you while Mute is on.

Ending a Call

- To end a call (both voice and video), click the **Hang Up** button in Microsoft Phone. Then you can exit Video Phone and Microsoft Phone or leave them open for the next call.
- To end only the *video* portion of the call, click the **Stop Video** button in the Video Phone window. Wait a few seconds for video to terminate. (The video call ends, but the voice call is still active.)

Receiving a Snapshot

The Snapshots feature of the Receive-Only Video Phone allows you to receive still video images while connected to a party whose computer is running Video Phone. However, because you are using Receive-Only Video Phone, you cannot send a snapshot to the other party.

To receive a snapshot:

1 Open **Receive-Only Video Phone**.

2 Using **Microsoft Phone** or the telephone attached to your computer start a voice call with another party who is running Video Phone.

3 Ask the other party to start Video Phone, open Snapshots, and take a snapshot.

4 In the Snapshots menu, select **Guest Snapshots**.

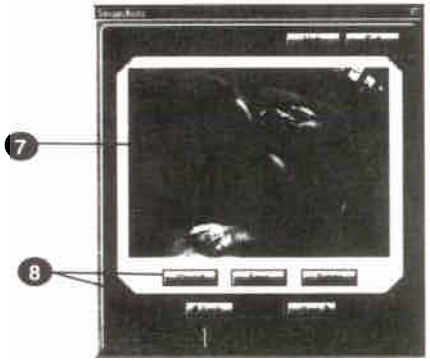
5 Ask the other party to send the snapshot.

6 Click **Yes** in the dialog box that appears, asking you to accept the snapshot.

7 View the other party's snapshot in your **Guest Snapshots** tab.

8 Now you can:

- Click the Back and Next buttons to see other snapshots you've received.
- Click the Save button to save the snapshot in .bmp (bitmap) format.
- Click Delete to remove the snapshot from the tab.
- Click Load to view a snapshot that you've received and then saved.



Saving a Snapshot

The Snapshots feature *temporarily* holds snapshots you've received. When you exit Video Phone, the snapshots in the tabs are deleted.

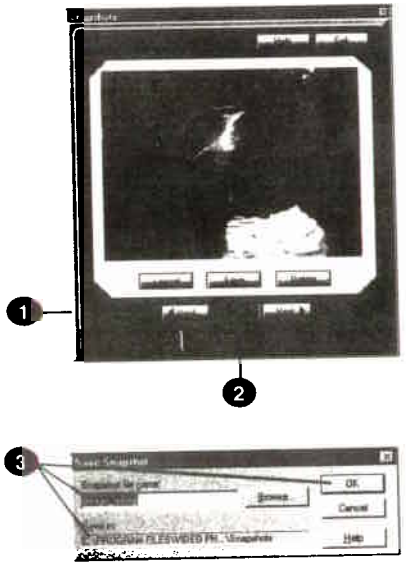
1 If you have received multiple snapshots, click the **Back** and **Next** buttons to view them.

2 When you see a snapshot you want to save, click the **Save** button.

3 In the Save dialog box:

- Name the file or use the name provided.
- Select a storage location for it.
- Click **Save**.

4 Click the Load button anytime to open and view snapshots that you saved.



Viewing Saved Snapshots

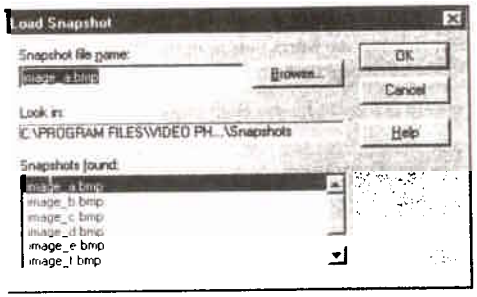
When you save snapshots, you're actually saving them as art files (called bitmaps) that you can open later in the My Snapshots tab.

1 Open **Video Phone**.

2 Select **My Snapshots** in the Snapshots menu.

3 Click the **Load** button.

4 In the dialog box that appears, select the name of the snapshot that you saved and click OK.



You view the snapshot in the My Snapshots tab.

Using Video Phone Help

Online help is available while you are using Video Phone. Because it's stored on your computer, you can refer to it anytime.

Online help includes:

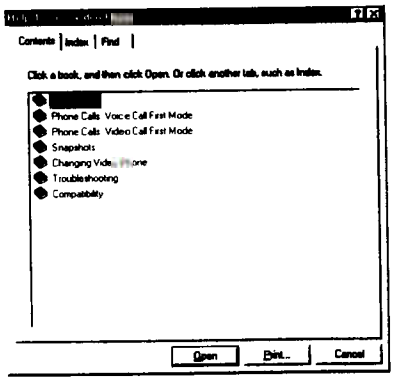
- a Getting Started section
- step-by-step instructions on using Video Phone
- information about the Video Call First mode, troubleshooting, and other technical topics

To access Video Phone online help:

1 To start Video Phone, click the **Start** button in the lower, left corner of your screen. Then select **Programs** and **Sony Video Phone**.

2 Select Help Topics in the Video Phone Help menu to see a Contents tab.

3 Double-click a topic for more information.



Improving Video Quality

Video telephone technology over standard phone lines today allows you to see 7 to 12 frames (video images) per second. Although this may sound like a lot of images in only one second, it's actually less than half the number you see on your television.

To maximize your video quality, consider these recommendations:

- Set your computer display to High Color (16-bit) or True Color (24-bit) before you make the next video call. (To do this, click the Start button, and then click Settings, Control Panel. Double-click the Display icon and click the Settings tab.)
- Exit all unneeded programs.
- Video quality depends upon the quality of the telephone connection. If the connection is poor, try hanging up and reconnecting. If you frequently hear static on your phone, report this to your local phone company.

Connection Quality Indicator

Video Phone provides a tool to help you monitor telephone line quality. To use this feature, in the Receive-Only Video Phone View menu, select Connection Quality Indicator. For more information on connection quality, see the Troubleshooting section of the online help.

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CHAPTER 2.

MOTHERBOARD (AG430HX) TECHNICAL PRODUCT SPECIFICATION

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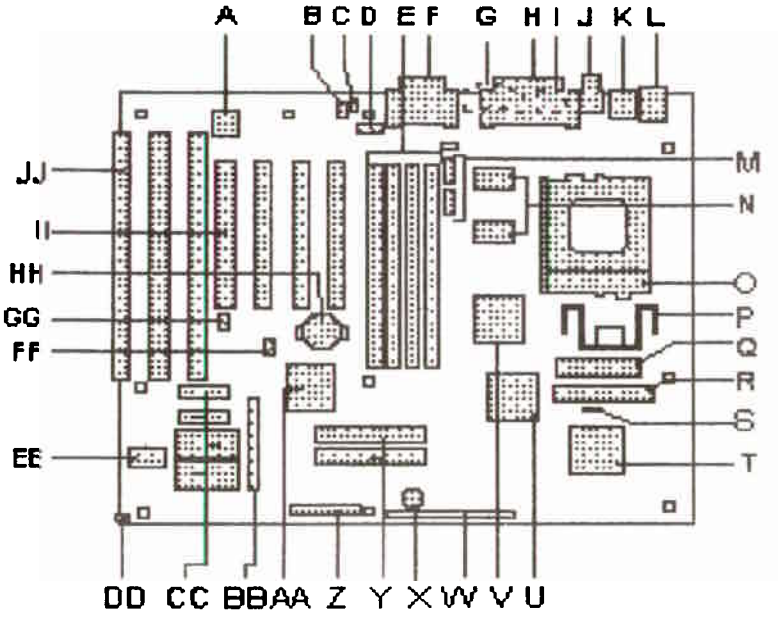
1 Motherboard Description

1.1 Overview

The AG43OHX motherboard integrates the Pentium® microprocessor, memory, and I/O technologies into a standard AATX form factor. The design supports Pentium processors operating at 75 MHz, 90 MHz, 100 MHz, 120 MHz, 133 MHz, 150MHz, 166 MHz, and 200 MHz. The other motherboard features include:

- Support for up to 128 MB of Extended Data Out (EDO) or Fast Page (FP) DRAM in 72-pin SIMM sockets, either parity, non-parity, or ECC.
- Type 7 Pentium Over-Drive™ socket
- L2 cache of 256 KB Pipeline Burst SRAM soldered onto the board
- Intel's 82430HX PCIset
- 2 Universal Serial Bus (USB) interfaces
- PC87306B Super I/O controller
- Yamaha OPL3-SA audio COIDEC component
- Headers for wavetable upgrade and Modem Blaster Pro'
- Circuitry for SRS' Passive 3D screen enhancement
- Dual-channel PCI Bus Mastering IDE
- Support for Plug and Play and Advanced Power Management (APM)
- ATI mach64 GT video
- 3 PCI/2 ISA and 1 PCI/ISA shared expansion slots

Software drivers and utilities are available to allow advanced operating systems such as Windows' 95 to take advantage of the hardware capabilities. Features such as Bus Mastering IDE, Windows 95-ready Plug and Play, Advanced Power Management (APM) with software-controlled power supply shutdown and bidirectional audio are all provided by software available for the A6430HX.



A. Yamaha OPL3-SA audio component
B. CD- ROM audio connector
C. Telephony connector
D. Modem Blaster audio connector
E. SIMM sockets
F. MIDI/game port
G. VGA port
H. Parallel port
K. USB ports
L. PS/2 Keyboard/mouse connectors
M. COM port headers
N. Pipeline burst cache
O. Socket 7 Pentium processor socket
Q. Primary power connector
R. Floppy drive connector
T. PC87306B Super I/O controller
U. 82371SB PCI/ISA Xcellerator (PIIX3)
V. 82439HX(TXC) PCI set
W. Front panel I/O connectors
X. Piezo Speaker (optional)
Y. Primary and Secondary IDE connectors
Z. Configuration jumper block
AA. ATI mach64 GT graphics controller
BB. AMC/ VESA header connector
CC. 2MB Video memory
DD. Fan connector (optional)
EE. 2 MB flash component
FF. Yamaha wavetable input connector
HH. Battery socket
II. PCI expansion connectors
JJ. ISA expansion connectors
I. Video Connector
J. S Video Connector

1.2 Motherboard Manufacturing Options

- Yamaha daughter card wavetable upgrade
- SRS sound

1.3 Form Factor

The motherboard is designed to fit into a standard ATX form factor chassis. Figure 2 illustrates the mechanical form factor for the motherboard. The motherboard does not adhere to the standard ATX v. 1.1 guidelines in that the outer dimensions are 12" x 9.6" (30.48 cm x 24.38 cm). Location of the I/O connectors, PCI and ISA slots, and mounting holes are in strict compliance with the ATX v. 1.1 specification.

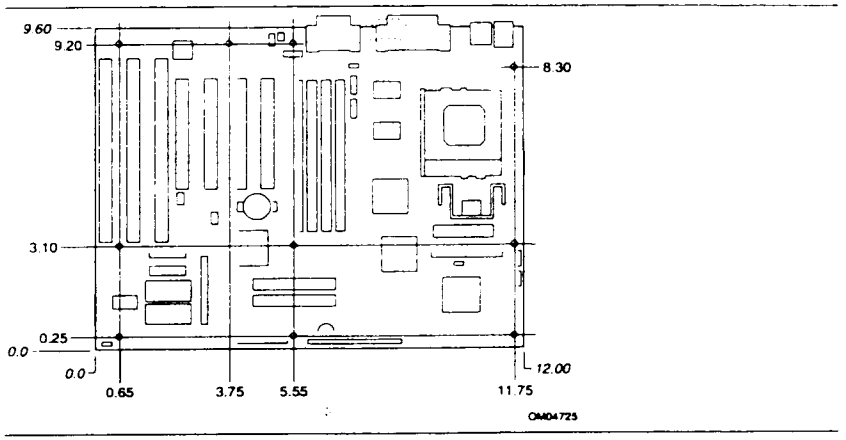


Figure 2. Motherboard Dimensions

1.4 Microprocessor

The motherboard is designed to operate with 2.9 volt and 3.4 volt Pentium processors, and Intel pentium processors with MMX™ technology. An onboard linear voltage regulator circuit provides the required volts from the 5.0 volt tap of the power supply. An on-board jumper enables use of VRE-specified processors. Pentium processors that run internally at 75, 90, 100, 120, 133, 150, 166, and 200 MHz are supported.

The Pentium processor maintains full backward compatibility with the 8086, 80286, Intel 386™ and Intel 486™ processors. It supports both read and write burst mode bus cycles, and includes separate 8 KB on-chip code and data caches that employ a write-back policy. The Pentium processor is an advanced numeric coprocessor that maintains backward compatibility with Intel 486DX math coprocessor and complies with ANSI/IEEE standard 754-1985.

1.5 Memory

1.5.1 System Memory

The motherboard provides four 72-pin SIMM sockets that make it possible to install up to 128 MB of RAM. The sockets support 1M x 32 (4MB). 2M x 32 (8 MB), 4M x 32 (16MB), and 8M x 32 (32MB) single- or double-side modules. Minimum memory size is 8 MB and maximum memory size is 128 MB. Memory timing requires 70 ns Fast Page devices or, for optimum performance, 60 ns EDO DRAM. If the maximum external processor clock speed is 60 MHz or slower, you can use 70 ns EDO DRAM. Both parity and non-parity devices are supported as well as FCC.

The four sockets are arranged in two banks of two sockets each. The sockets are designated Bank 0 and Bank 1. Each bank provides a 64/72-bit wide data path. Both SIMMs in a bank must be of the same memory size and type, although you can install different types of memory between banks. For instance, you can install 70 ns Fast Page DRAM in one bank and 60 ns EDO DRAM in the other. Each memory bank is independently optimized for maximum performance. You can install memory in only one bank or both banks may be populated at the same time. There are no jumper settings required for the memory size or type. Memory size and type are automatically detected by the system BIOS. Thus, no jumper settings need to be set for installing memory. Use only tin lead SIMMs when adding DRAM.

1.5.2 Second Level Cache

The Xcelerated Controller device supports a second-level cache that uses the synchronous pipeline burst static RAM (PBSRAM).

The motherboard supports 256 KB of soldered down L3 cache. This configuration can provide cache for the first 64 MB of system memory. The BIOS automatically detects and configures the cache size.

1.6 Chipset

The Intel 82430HX PCIset consists of the 82439HX Xcelerated Controller (TXC) and one 82371SB PCI ISA/IDE Xcelerator (PIIX3) bridge chip.

1.6.1 82439HX Xcelerated Controller (TXC)

The 82439HX provides all control signals necessary to drive an L2 cache and the DRAM array, including multiplexed address signals. The TXC also controls system access to memory and generates snoop controls to maintain cache coherency. The TXC comes in a 324-pin BGA package and includes the following features:

- Processor interface control
- Integrated L2 write-back cache controller
  - — Pipeline burst SRAM
  - — 256 or 512 KB direct-mapped
- Integrated DRAM controller
  - — 64 bit path to memory
  - — Support for EDO and Fast Page DRAM
  - — Parity and non-parity support
- Fully synchronous PCI 2.1 compliant bus interface
  - — 25/30/33 MHz
  - — PCI to DRAM > 100 MB/second
  - — Up to 4 PCI bus masters in addition to the PIIX3 and IDE.

1.6.2 82371SB PCI ISA/IDE Xcelerator (PIIX3)

The 82371SB provides the interface between the PCI and ISA buses and integrates a dual channel fast IDE interface capable of supporting up to four devices. The 82371SB integrates four 8-bit and three 16-bit DMA channels, one 16-bit timer/ counter, two eight-channel interrupt controllers. PCI-to-AT interrupt mapping circuitry, NMI logic, ISA refresh address generation, and PCI/ISA bus arbitration circuitry together on the same device. The PIIX3 comes in a 208-pin QFP package and includes the following features.

- Interface between the PCI and ISA buses
- Universal Serial Bus controller
  - — Host/hub controller
- Integrated fast IDE interface
  - — Support for up to four devices
  - — PIO Mode 4 transfers up to 6 MB/second
  - — Integrated 8 x 32-bit buffer for bus master PCI IDE burst transfers
  - — Bus master mode
- PCI 2.1 compliant
- Enhanced fast DMA controller
- Interrupt controller and steering
- Counters/timers
- SMI interrupt logic and timer with fast cutoff mode

1.6.3 IDE Support

The motherboard provides two independent high performance bus-mastering PCI IDE interfaces capable of supporting PIO Mode 3 and Mode 4 devices. The system BIOS supports Logical Block Addressing (LBA) and Extended Cylinder Sector Head (ECHS) translation modes as well as ATAPI (e.g. CD-ROM) devices on both IDE interfaces. Detection of IDE device transfer rate and translation mode capability is automatically determined by the system BIOS. Booting from CD-ROM is supported in adherence to the "El Torito" bootable CD-ROM format specification.

1.7 I/0 Controller

The National Semiconductor PC87306B component combines control for the integrated serial ports, parallel port, floppy drive, RTC and keyboard controller. This component provides:

- Two NS16C550-compatible UARTs with send/receive 16 byte FIFO
- Support for an IrDA compliant Infra Red interface
- Multi-mode bidirectional parallel port
  - — Standard mode; IBM and Centronics compatible
  - — Enhanced Parallel Port (EPP) with BIOS/Driver support
  - — High Speed mode; Extended Capabilities Port (ECP) compatible
- Industry standard floppy controller with 16 byte data FIFO (2.88 MB floppy support)
- Integrated Real Time Clock (RTC) accurate within +/- 13 minutes/yr. at 25° C and 5 volts when the system is continuously powered on
- Integrated 8042 compatible keyboard controller

By default, the 306B interfaces are automatically configured by the BIOS during boot-up. You can also manually configure the interfaces with the BIOS Setup utility.

1.7.1 Floppy Controller

The I/O controller is software compatible with the DP8473 and 82077 floppy disk controllers. You can configure the floppy interface for 360 KB or 1.2 MB 5.25-inch media or for 720 KB. 1.2 MB, 1.44 MB. or 2.88 MB 3.5-inch media with the BIOS setup utility. By default, the Floppy A interface is configured for 1.44 MB and Floppy B is disabled. A Setup option makes it possible to prevent a user from being able to write to a floppy drive. A driver is required for configuring the floppy interface or 1.2 MB 3.5-inch (3-mode floppy) operation.

1.7.2 Keyboard and Mouse Interface

PS/2 keyboard and mouse connectors are located on the back panel side of the motherboard. The 5 volt lines to these connectors are protected with a PolySwitch Circuit that acts much like a self-healing fuse, re-establishing the connection after an over-current condition is removed. While this device eliminates the possibility of having to replace a fuse, you should still be sure to turn off the system power before installing or removing a keyboard or mouse.

The integrated 8042 microcontroller contains the AMI Megakey keyboard and mouse controller code that, besides providing traditional keyboard and mouse control functions, supports Power-On/Reset (POR) password protection. The POR password can be defined by the user via the Setup program. The keyboard controller also provides for the following "hot key" sequences:

- <CTRL><ALT><DEL>: System software reset. This sequence performs a software reset of the system by jumping to the beginning of the BIOS code and running the POST operation.
- <CTRL><ALT><+> and <CTRL><ALT><->: Turbo mode selection. <CTRL><ALT><-> sets the system for de-turbo mode, emulating an 25 MHz AT, and <CTRL><ALT><+> sets the system for turbo mode. Changing the Turbo mode may be prohibited by an operating system, or when the processor is in Protected mode or virtual x86 mode under DOS.
- <CTRL><ALT><defined in setup>: A power down hot-key sequence takes advantage of the SMM features of the Pentium processor to greatly reduce the system's power consumption while maintaining the responsiveness necessary to service external interrupts. A security hot-key sequence provides password protection to the system.
- The User Password must be entered to unlock the system. This feature will not take effect unless the User Password has been set in the BIOS setup.

1.7.3 Real-Time Clock, CMOS RAM and Battery

The integrated real-time clock (RTC) is DS1287 and MC146818-compatible and provides a time of day clock and a 100-year calendar with alarm features. You can use the BIOS Setup program to set the RTC.

An external coin-cell style battery provides power to the RTC and CMOS memory. The battery has an estimated lifetime of three years, if the system is not plugged into the wall socket. When the system is plugged in, power is supplied from the power supply's 5 V standby current to extend the life of the battery.

The battery also supports 242-byte battery-backed CMOS RAM in two banks which is reserved for BIOS use. The BIOS Setup program makes it possible to set the CMOS RAM to specific values or to clear the settings to the system default values. You can also create CMOS RAM values by changing a configuration jumper on the motherboard.

1.7.4 Parallel Port

The back panel of the motherboard provides a multi-mode bidirectional parallel port. The BIOS Setup program provides options for configuring the parallel port in the following modes: output only compatible mode, bidirectional mode, ECP or EPP modes. You can also assign the parallel port to I/O addresses 278H, 378H, or 3BCH and IRQ's 5 or 7. Furthermore, a routable DMA scheme allows Plug and Play operating systems such as Windows 95 to route either DMA channels 1 or 3 to the parallel port for ECP mode. EPP BIOS support must be provided by a device driver or TSR.

1.8 Universal Serial Bus (USB) Support

The motherboard provides two USB ports that make it possible to Connect two USB peripheral devices directly to the motherboard without an external hub. You can connect additional devices by connecting an external hub to either of the built-in ports. The motherboard supports the standard universal host controller interface (UHCI) and takes advantage of the standard software drivers written to be compatible with UHCI. Features of the USB include:

- Self-identifying peripherals
- Automatic mapping of function to driver and configuration
- Support for isochronous and asynchronous transfer types over the same set of wires
- Support for up to 127 physical devices
- Guaranteed bandwidth and low latencies appropriate for telephony, audio and other applications
- Error handling and fault recovery mechanisms built into the protocol

1.9 Graphics Subsystem

The motherboard comes with the ATI mach64 GT graphics controller. The mach64 GT is a multimedia graphics and video controller that incorporates a built-in drawing coprocessor, 3D graphics, video scaler, color space converter, True Color Palette DAC, and triple-clock synthesizer.

The graphics controller is supported with 2 MB of graphics EDO DRAM or SGRAM soldered to the motherboard.

Table 1. Supported Video Resolutions During Simultaneous TV Output — Maximum Refresh rate (Hz) at:

Resolution	16 colors	256 Colors	65K Colors	16.7M Colors
640 x 480	100	100	100	100
800 x 600	100	100	100	90
1024 x 768	not sup	not sup	not sup	not sup
1152 x 864	not sup	not sup	not sup	not sup
1280 x 1024	not sup	not sup	not sup	not sup

1.9.1 VESA/AMC Feature Connector

The motherboard contains a 40-pin feature connector that uses 34 pins for the VESA standard bus and 6 pins for the ATI Enhanced Visual Architecture (EVA) bus. To support multimedia performance, this connector makes it possible to synchronize graphics output between an external NTSC or PAL signal and a shared frame buffer interface. It also interfaces with the Local Peripheral Bus (LPB) to provide a bidirectional interface to a companion video device such as an MPEG/live video decoder. The motherboard supports the VESA DPMS protocol. This protocol makes it possible to use power saving modes with DPMS-compliant monitors and the VESA Display Data Channel (DDC2B), which permits transfer of monitor identification and resolution support data.

1.10 Audio Subsystem

The motherboard features a 16-bit stereo audio subsystem as a manufacturing option. The audio subsystem is based on the Yamaha YMF701 OPL3-SA FM synthesizer. The synthesizer provides all the digital audio and analog mixing functions required for recording and playing audio on personal computers. The audio subsystem includes the following features:

- Stereo analog-to-digital and digital-to-analog converters
- Analog mixing, anti-aliasing, and reconstruction filters
- Line and microphone level inputs
- Digital audio compression through selectable A-law/μlaw
- Full digital control of all mixer and volume control functions
- Rear panel microphone/line in function is switchable between Mic In and Line In via software
- Connectors for an optional wavetable daughter card

1.10.1 SRS Sound System

The motherboard uses SRS (Sound Retrieval System) circuitry to produce a 3D stereo enhancement from conventional stereo or monaural input. When used with a standard two speaker system, the SRS feature allows a listener to hear the output as if he or she were present in the original three-dimensional sound field.

SRS uses corrective transfer functions to compensate for the difference in the spectral characteristics of sounds that originate in front of the listener and those that originate from the sides. SRS processes and equalizes the sum (L+R) and the difference (L-R and R-L) of the signals so that ambiance and spatial cues are restored. By controlling the frequency response of the different signals in this way, SRS provides a broader perceived stereo image.

1.10.2 Wavetable Upgrade

The motherboard provides a two-header connector system for attaching an optional wavetable synthesizer daughter board.

1.11 Motherboard Connectors

The motherboard provides header connectors for CD-ROM audio, telephony audio, floppy drive. IDE, COM ports, main power, fan, wavetable audio daughter card, Modem Blaster, VESA/AMC and front panel I/O connectors.

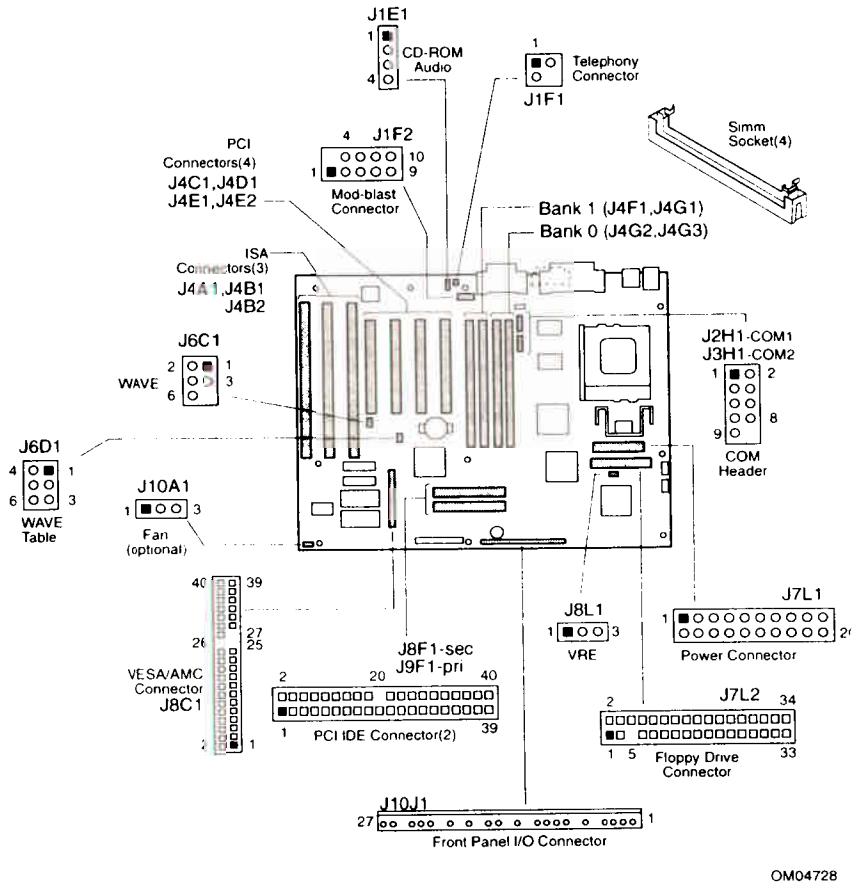


Figure 3. Motherboard Connector Locations

1.11.1 VESA/AMC Feature Connector

VESA/AMC Connector Pinout (J8C1)

Pin	Signal Name	Pin	Signal Name
1	GND	2	DATA0
3	GND	4	DATA1
5	GND	6	DATA2
7	GND	8	DATA3
9	ESYNC*	10	DATA4
11	EDCLK*	12	DATA5
13	SDA	14	DATA6
15	GND	16	DATA7
17	GND	18	VDCLK
19	GND	20	BLK#
21	VFSENSE#	22	HSYNCH
23	SCL	24	VSYNCH
25	Key	26	GND
27	Key	28	Key
29	VCC	30	SA#_SAD3
31	RESET#	32	SNRDYN_SAD7
33	SAD6	34	VMASKO_SAD5
35	SDA_SAD4	36	AMCREV
37	GND	38	+12V
39	AUDL	40	AUDR

1.11.2 CD-ROM Audio Connector

CD-ROM Audio Connector (J1E1)

Pin	Signal Name
1	GND
2	CD-LEFT
3	GND
4	CD-RIGHT

1.11.3 Telephony Connector

Telephony Connector Pinout (J1F1)

Pin	Signal Name
1	GND
2	MONO_OUT
3	MIC IN
4	Key

1.11.4 Modem Blaster Connector

Modem Blaster Connector Pinout (J1F2)

Pin	Signal Name	Pin	Signal Name
1	GND	2	Key
3	LINE IN	4	GND
5	LINE OUT LEFT	6	GND
7	LINE OUT RIGHT	8	MODEM IN
9	GND	10	MIC IN

1.11.5 Wavetable Connectors

Wavetable Connector Pinout (J6C1)

Pin	Signal Name	Pin	Signal Name
1	VOC	2	RSTSLOT
3	MIDI_OUT	4	AUD33MHz
5	Key	6	GND

Wavetable Connector Pinout (J6D1)

Pin	Signal Name	Pin	Signal Name
1	GND	2	BCK
3	LRCK	4	EXTEN*
5	SIN	6	VCC

1.11.6 COM Port Header Connectors

COM Port Header Connector Pinout COM1 (J2H1), COM2 (J3H1)

Pin	Signal Name	Pin	Signal Name
1	DCD	2	DSR
3	SIN	4	RTS
5	SOUT	6	CTS
7	DTR	8	RI
9	GND	10	KEYKEYNC

1.11.7 Floppy Drive Connector

Floppy Drive Connector Pinout (J7L2)

Pin	Signal Name	Pin	Signal Name
1	GND	2	DENSEL*
3	GND	4	TP
5	Key	6	FDEDIN*
7	GND	8	FDINDX
9	GND	10	FDM00*
11	GND	12	FDDS1*
13	GND	14	FDDS0*
15	GND	16	FDDM01*
17	MSENT	18	FDDIR*
19	GND	20	FDSTEP*
21	GND	22	FDWD*
23	GND	24	FDWE*
25	GND	26	FDTRK0*
27	MSEN0	28	FDWPD*
29	GND	30	FDRDATA*
31	GND	32	FDHEAD*
33	GND	34	DSKCHG*

1.11.8 Front Panel I/O Connector

Front Panel I/O Connector Pinout (J10J1)

Pin	Signal Name	Pin	Signal Name
1	POWER ON	15	HD ACTIVE
2	GND	16	+5V
3	SLEEP REQ	17	KEY
4	SLEEP DRIVER	18	GND
5	KEY	19	KEY
6	+5V	20	SLEEP LED
7	KEY	21	KEY
8	IRDA	22	GND
9	GND	23	RESET
10	IRTX	24	GND
11	CONIR	25	KEY
12	KEY	26	PIEZO IN
13	+5V	27	SPFRONT
14	KEY		

1.11.9 PCI IDE Header Connectors

PCI IDE Header Connectors J8F1, J9F1

Pin	Signal Name	Pin	Signal Name
1	RESET IDE	2	GND
3	HOST DATA 7	4	HOST DATA 8
5	HOST DATA 6	6	HOST DATA 9
7	HOST DATA 5	8	HOST DATA 10
9	HOST DATA 4	10	HOST DATA 11
11	HOST DATA 3	12	HOST DATA 12
13	HOST DATA 2	14	HOST DATA 13
15	HOST DATA 1	16	HOST DATA 14
17	HOST DATA 0	18	HOST DATA 15
19	GND	20	KEY
21	DDRQ0 (DDRQ1)	22	GND
23	I/O WRITE #	24	GND
25	I/O READ #	26	GND
27	IOCHRDY	28	VCC PULL-UP
29	DDACK0 (DDACK1) #	30	GND
31	IRQ14 (IRQ15)	32	RESERVED
33	ADDR 1	34	RESERVED
35	ADDR 0	36	ADDR 2
37	CHIP SELECT 1P (1S) #	38	CHIP SELECT 3P (3S) #
39	ACTIVITY #	40	GND

1.11.10 Power Supply Connectors

When used with a power supply that supplies remote power on/off, the motherboard can turn off the system power through software control ("soft-off" is a manufacturing option). The Powerman utility supplied for Windows 3.1 x allows for soft-off as does the Shutdown icon in the Windows 95 Start menu. The system BIOS will turn off the system power when it receives the proper APM command from the OS. For example, Windows 95 will issue this APM command when the user selects the "Shutdown the computer" option. . .. M must he enabled in the system BIOS and the OS in order for the soft-off feature to work correctly. In order for the system to recognize the presence of a "soft-off" power supply, the supply must tie pin 14 of the PWS Control connector to ground. When soft-off is enabled, if power to the system is interrupted by a power outage or the power cord being unplugged, when you reapply power, the system will return to the state it was in when the power was disconnected. If the system was turned on when power was disconnected, the system will turn back on when power is reapplied.

Primary Power Connector Pinout (J7L1)

Pin	Name	Function
1	3.3V	3.3V
2	3.3V	3.3V
3	GND	GND
4	+5V	+5V Vcc
5	GND	GND
6	+5V	+5Vcc
7	GND	GND
8	PWRGD	Power Good
9	5VSB	standby 5V
10	+12V	+12V
11	3.3V	3.3V
12	-12V	-12V

13	GND	GND
14	PS_ON*	soft-off control
15	GND	GND
16	GND	GND
17	GND	GND
18	-5V	-5V
19	+5V	+5V Vcc
20	+5V	+5V Vcc

1.11.11 Front Panel Connectors

The motherboard provides header connectors that support functions typically located on the chassis bezel. Front panel connectors include:

- Power On
- Sleep SW
- System Reset
- Sleep LED
- Hard Drive Activated LED
- System Speaker
- Infrared (IRDA) port

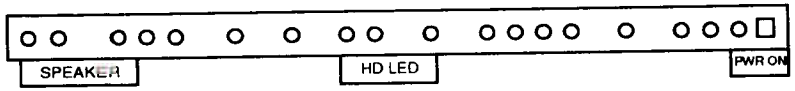


Figure 4. Front Panel I/O Connectors (J10J1)

1.11.11.1 Speaker

A speaker may be installed on the motherboard as a manufacturing option. The speaker provides error beep code information during the Power-On Self Test in the event that a computer cannot use the video interface. The speaker option includes a jumper on the motherboard so a user can disable the speaker. (Disabling the speaker makes it possible to install an off-board speaker.) The speaker is not connected to the Yamaha audio sub system, so it does not receive output fro n the audio subsystem.

Speaker Connector Pinout (J10J1)

Pin	Signal Name
24	GND
25	Key
26	PIEZO IN
27	SPKROUT

1.11.11.2 Hard Drive LED

You can connect this header to an LED to provide a visual indicator of data being read from or written to an IDE hard drive. For the LED to function properly, the IDE drive must be connected to the onboard IDE controller on the motherboard.

HD LED Connector Pinout (J10J1)

Pin	Signal Name
13	+5V
14	Key
15	HD ACTIVE
16	+5V

1.11.12 Back Panel Connectors

The back panel provides external access to PS/2-single keyboard and mouse connectors, two USB connectors, one parallel port, a VGA connector a Composite Video connector, an S-/Video connector, a MID/game port and the external audio jacks that are integrated on the motherboard. Figure 5 shows the location of the I/O connectors.

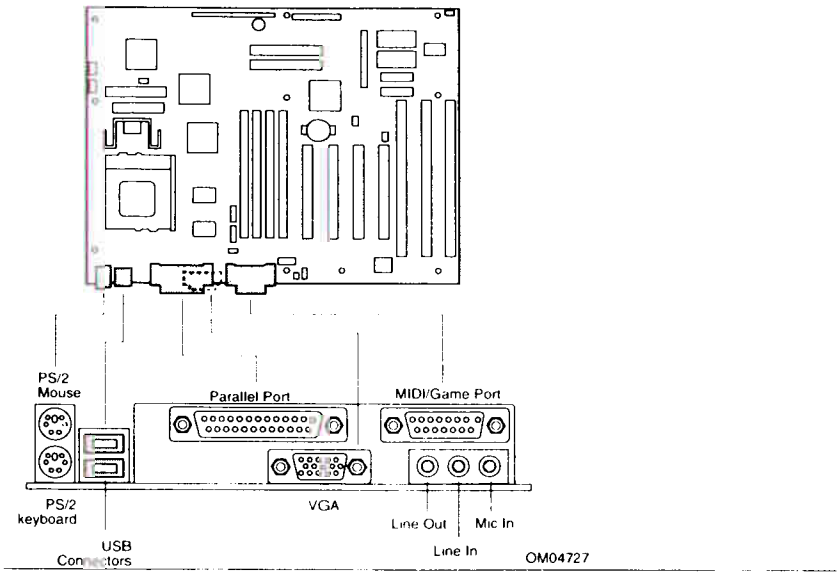


Figure 5. I/O Connections

1.11.12.1 Keyboard and Mouse Ports

Keyboard and Mouse Connector Pinouts (J1M1)

Pin	Signal Name
1	DATA
2	NC
3	GND
4	+5V (FUSED)
5	CLOCK
6	NC

1.11.12.2 USB Connectors

USB Connectors Pinout (J1L2)

Pin	Signal Name
1	PWR
2	SIGNAL
3	SIGNAL
4	GND

1.11.13 Parallel Port

Parallel Port Connector Pinout (J1J2)

Pin	Signal Name	Pin	Signal Name
1	STROBE-	14	AUTOFD
2	DATA BIT 0	15	FAULT*
3	DATA BIT 1	16	PRINT
4	DATA BIT 2	17	SLOT IN
5	DATA BIT 3	18	GND
6	DATA BIT 4	19	GND
7	DATA BIT 5	20	GND
8	DATA BIT 6	21	GND
9	DATA BIT 7	22	GND
10	ACK	23	GND
11	BUSY	24	GND
12	FEERROR	25	GND
13	SLCT		

1.11.14 MINI/Game Port

MINI/Game Port Pinout (J1G1)

Pin Name	Signal Name
1	+5V
2	JSBUTO
3	JSX1
4	GND
5	GND
6	JSY1
7	JSBUT1
8	+5V
9	+5V
10	JSBUT2
11	JSX2
12	MIDI_OUT
13	JSY2
14	JSBUT3
15	MIDI_IN

1.11.15 Add-In Board Expansion Connectors

Expansion Slots support up to four PCI and up to three ISA add-in boards. The PCI bus is fully compliant with the PCI 2.1 specification and supports up to four bus master devices through the four PCI connectors.

PCI Add-In Board Expansion Connector Pinout (J4E1, J4E2, J4C1, J4D1)

Pin	Signal Name	Pin	Signal Name	Pin	Signal Name	Pin	Signal Name
A1	Vcc	B1	-12V	A32	AD16	B32	AD17
A2	+12V	B2	GND	A33	3.3V	B33	CBE2#
A3	Vcc	B3	GND	A34	FRAME#	B34	GND
A4	Vcc	B4	No Connect	A35	GND	B35	IRDY#
A5	Vcc	B5	Vcc	A36	TRDY#	B36	3.3V
A6	PIRQ1#	B6	Vcc	A37	GND	B37	DEVSEL#
A7	PIRQ3#	B7	PIRQ2#	A38	STOP#	B38	GND
A8	Vcc	B8	PIRQ0#	A39	3.3V	B39	LOCK#
A9	No Connect	B9	PRSNT1B#	A40	SDONE	B40	PERR#
A10	Vcc	B10	No Connect	A41	SBO#	B41	3.3V
A11	No Connect	B11	PRSNT2B#	A42	GND	B42	SERR#
A12	GND	B12	GND	A43	PAR	B43	3.3V
A13	GND	B13	GND	A44	AD15	B44	CBE1#
A14	No Connect	B14	No Connect	A45	3.3V	B45	AD14
A15	RS#	B15	GND	A46	AD13	B46	GND
A16	Vcc	B16	PCKL2	A47	AD11	B47	AD12
A17	GNT#	B17	GND	A48	GND	B48	AD10
A18	GND	B18	REQ#	A49	AD9	B49	GND
A19	Reserved	B19	Vcc	A50	Key	B50	Key
A20	AD30	B20	AD31	A51	Key	B51	Key
A21	3.3V	B21	AD29	A52	CBEO#	B52	AD8
A22	AD28	B22	GND	A53	3.3V	B53	AD7
A23	AD26	B23	AD27	A54	AD6	B54	3.3V
A24	GND	B24	AD25	A55	AD4	B55	AD5
A25	AD24	B25	3.3V	A56	GND	B56	AD3
A26	AD25 (IDSEL)	B26	CBE3#	A57	AD2	B57	GND
A27	3.3V	B27	AD23	A58	AD0	B58	AD1
A28	AD22	B28	GND	A59	Vcc	B59	Vcc
A29	AD20	B29	AD21	A60	REQ64#	B60	ACK64#
A30	GND	B30	AD19	A61	Vcc	B61	Vcc
A31	AD18	B31	3.3V	A62	Vcc	B62	Vcc

ISA Add-In Board Expansion Connector Pinout (J4A1, J4B1, J4B2)

Pin	Signal Name	Pin	Signal Name	Pin	Signal Name	Pin	Signal Name
A1	IOCHK-	B1	GND	A26	SA5	B26	DACK2-
A2	SD7	B2	RSTSLOT	A27	SA4	B27	TC
A3	SD6	B3	Vcc	A28	SA3	B28	BALE
A4	SD5	B4	IRQB9	A29	SA2	B29	Vcc
A5	SD4	B5	-5V	A30	SA1	B30	OSC
A6	SD3	B6	DREQ2	A31	SA0	B31	GND
A7	SD2	B7	-12V	C1	SBHE-	D1	MEMCS16-
A8	SD1	B8	ZEROWS-	C2	LA23	D2	IOCS16-
A9	SD0	B9	+12V	C3	LA22	D3	IRQB10
A10	IOCHRDY	B10	GND	C4	LA21	D4	IRQB11
A11	AEN	B11	SMEMW-	C5	LA20	D5	IRQB12
A12	SA19	B12	SMEMR-	C6	LA19	D6	IRQ15
A13	SA18	B13	IOW-	C7	LA18	D7	IRQ14
A14	SA17	B14	IOR-	C8	LA17	D8	DACK0-
A15	SA16	B15	DACK3-	C9	MEMR-	D9	DREQ0
A16	SA15	B16	DREQ3	C10	MEMW-	D10	DACK5-
A17	SA14	B17	DACK1-	C11	SD8	D11	DREQ5
A18	SA13	B18	DREQ1	C12	SD9	D12	DACK6-
A19	SA12	B19	REFRESH-	C13	SD10	D13	DREQ6
A20	SA11	B20	SYSCLK	C14	SD11	D14	DACK7-
A21	SA10	B21	IRQA7	C15	SD12	D15	DREQ7
A22	SA9	B22	IRQA6	C16	SD13	D16	Vcc
A23	SA8	B23	IRQA5	C17	SD14	D17	MASTER-
A24	SA7	B24	IRQA4	C18	SD15	D18	GND
A25	SA6	B25	IRQA3				

1.12 Jumper Settings

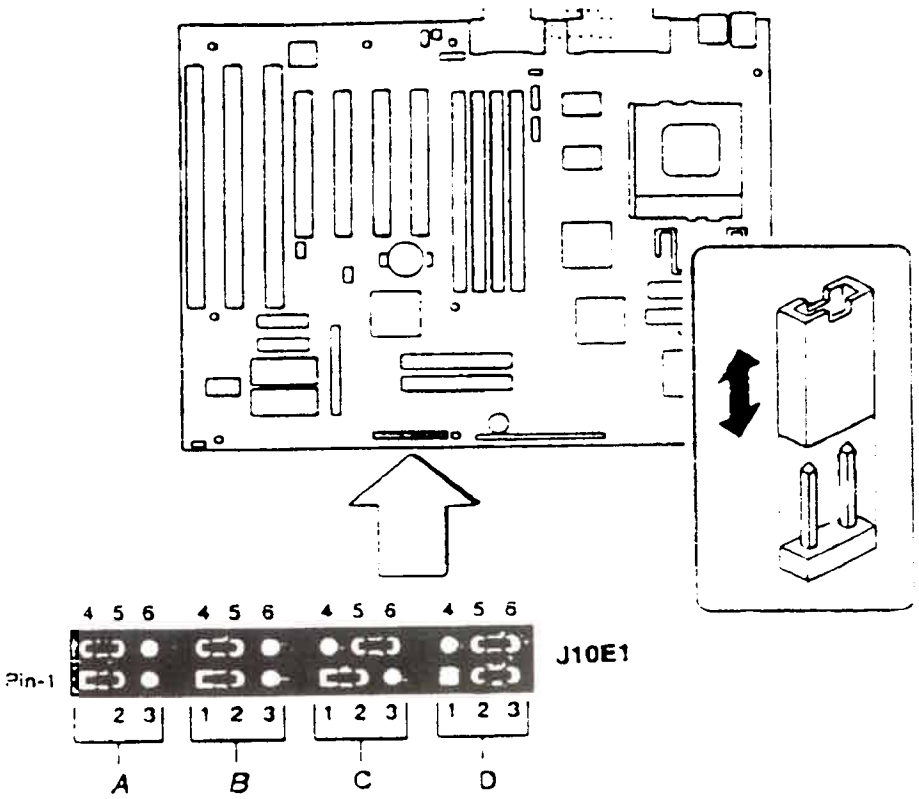


Figure 6. Jumper Locations

Table 3. Configuration Jumper Settings

Function	Jumper Block J10E1 Section	Configuration
Password clear	A	1-2 Password enabled (Default) 2-3 Password clear/disabled
CMOS clear	A	4-5 Keep (Default) 5-6 Clear
BIOS Setup Access	B	1-2 Access enable (Default) 2-3 Access disable
BIOS Recover	B	4-5 Normal (Default) 5-6 Recover enabled
Processor speed ratio	C	See Table 4
Host bus speed **(Note: These jumpers also set the PCI and ISA clock speeds.)**	D	See Table 4

Table 4. Processor/System Speed Settings

CPU Freq. (MHZ)	Host Bus Freq. (MHz)	Bus Freq. Ratio	PCI Freq. (MHz)	ISA Freq. (MHz)	Jumper Settings for J10E1-C	Jumper Settings for J10E1-D
200	66	3x	33	8.33	1-2 and 5-6	1-2 and 5-6
166	66	2.5x	33	8.33	1-2 and 5-6	2-3 and 5-6

1.12.1 Clear CMOS (J1OE1-A)

Allows CMOS settings to be reset to default values by moving the jumper from pins 4-5 to pins 5-6 and turning the system on. When the system displays "NVRAM cleared by jumper," you should turn off the system and return the jumper to the 4-5 position to restore normal operation. This procedure should be done whenever the system BIOS is updated. Default is for this jumper to be on pins 4-5.

1.12.2 Password Clear (J1OE1 -A)

Allows you to clear the system password by moving the jumper from pins 1-2 to pins 2-3 and turning the system on. You should then turn the computer off and return the jumper to the 1-2 position to restore normal operation. This procedure should only be done if the user password has been forgotten. Moving the password clear jumper to the jumper to the 2-3 position effectively disables the password function. Default is for the password to be enabled (1-2 positions).

1.12.3 BIOS Setup Access (J1QE1-B)

Allows you to disable access to BIOS Setup utility by moving this jumper from the 1-2 position to the 2-3 position. Default is for access to the Setup program to be enabled (1-2 position).

1.12.4 BIOS Recovery (J1OE1-B)

This jumper makes it possible to recover a corrupted BIOS by moving the jumper from the 4-5 position to the 5-6 position and inserting a recovery diskette. Default setting is for normal operation (4-5 position).

1.13 Environmental

Table 5. Motherboard Environmental Specifications

Parameter	Specification
Temperature	
Non-operating	-40°C to +70°C
Operating	+0°C to +55°C
DC Voltage	
+2.9V	± 5%
+ 5V	±5%
-5V	±5%
+12V	±5%
-12V	±5%
Vibration	
Unpackaged	5 Hz to 20Hz: 0.01g2 Hz sloping up to 0.02g2 Hz
	20 Hz to 500 Hz: 0.02g2 Hz (flat)
Packaged	10 Hz to 40 Hz: 0.015g2 Hz (flat)
	40 Hz to 500 Hz: 0.015g2 Hz sloping down to 0.00015g2 Hz

1.14 Regulatory Compliance

This printer circuit assembly meets the following safety and EMI regulations when correctly installed in a compatible host system.

1.14.1 Safety

1.14.1.1 UL 1950-CSA 950.95, 3rd edition, 28 July 1995

The Standard for Safety of Information Technology Equipment including Electrical Business Equipment, (USA and Canada)

1.14.1.2 CSA C22.2 No. 950-93, 2nd Edition

The Standard for Safety of Information Technology Equipment including Electrical Business Equipment. (Canada)

1.14.1.3 EN 60 950, 2nd Edition, 1992 (with Amendments 1,2, and 3)

The Standard for Safety of Information Technology Equipment including Electrical Business Equipment. (European Union)

1.14.1.4 IEC 950, 2nd Edition, 1991 (with Amendments 1, 2, and 3)

The Standard for Safety of Information Technology Equipment including Electrical Business Equipment. (International)

1.14.1.5 EMKO-TSE (7A-SEC) 267/94

Summary of Nordic deviations to EN 60 950, (Norway, Sweden, Denmark, and Finland)

1.14.2 Electromagnetic Interference (EMI)

1.14.2.1 FCC Class B

Title 47 of the Code of Federal Regulations, Parts 2 and 15, Subpart B, pertaining to unintentional radiators. (USA)

1.14.2.2 CISPR 22, 2nd Edition, 1993

Limits and methods of measurement of Radio Interference Characteristics of Information Technology Equipment. (International)

1.14.2.3 EN 55 022, 1995

Limits and methods of measurement of Radio Interference Characteristics of Information Technology Equipment. Europe)

1.14.2.4 EN 50 082-1, 1992

Generic Immunity Standard. Currently compliance is determined via testing to IEC 801-2, -3 and -4. (Europe)

1.14.2.5 VCCI Class 2 (ITE)

Implementation Regulations for Voluntary Control of Radio Interference by Data Processing Equipment and Electronic Office Machines (Japan)

1.14.2.6 ICES-003, Issue 2

Interference-Causing Equipment Standard, Digital Apparatus. (Canada)

1.14.3 Product Certification Markings

This printed circuit assembly has the following product certification markings:

- European CE Mark
  - — Marking on the board or shipping container.
- UL Recognition Mark
  - — Marking is the UL File No. E139761 on the component side of the board and the PB No. on the solder side of the board. Board material flammability is 94V-1 or 0.
- Canadian Compliance Mark
  - — Marking is a small c followed by a stylized backward UP on the component side of the board.

2 Motherboard Resources

2.1 Memory Map

Memory Map

Address Range (Decimal)	Address Range (hex)	Size	Description
1024K-262144K	100000-10000000	2M	Extended Memory
960K-1023K	F0000-FFFFF	64K	AMI System BIOS
944K-959K	EC000-EFFFF	16K	Book Block
936K-943K	EA000-EBFFF	8K	ESCD (Plug and Play configuration area)
932K-935K	E9000-E9FFF	4K	Reseved for BIOS
928K-931K	E8000-E8FFF	4K	OEM LOGS Area
896K-927K	E0000-E7FFF	32K	BIOS Reserved
800K-895K	C8000-DFFFF	96K	Available at DOS memory (open to ISA and MCI bus)
640K-799K	A0000-C7FFF	160K	Video memory and BIOS
639K	9FC00-9FFFF	1K	Extended BIOS Data (moveable by QEMM, 386 MAX)
512K-638K	00000-9FBF	127K	Extended Conventional
0K-511K	00000-7FFFF	512K	Conventional

2.2 I/O Map

I/O Map

Address (hex)	Size	Description
0000-000F	16 bytes	PIIX3-DMA 1
0020-0021	2 bytes	PIIX3 - Interrupt Controller 1
002E-002F	2 bytes	Ultra I/O Configuration
0040-0043	4 bytes	PIIX3 - Timer 1
0060	1 byte	Keyboard Controller Byte - Reset IRQ
0061	1 byte	PIIX3 - NMI, Speaker Control
0064	1 byte	Keyboard Controller, CMD/STAT Byte
0070, bit 7	1 bit	PIIX3 - Enable NMI
0070, bits 6:0	7 bits	PIIX3 - Real Time Clock, Address
0071	1 byte	PIIX3 - Real Time Clock, Data
0078	1 byte	Reserved - Brd. Config.

I/O Map (continued) *Only by DWOPRD accesses

Address (hex)	Size	Description
0079	1 byte	Reserved - Brd. Config.
0080 - 008F	16 bytes	PIIX3 - Interrupt Controller 2
0080 - 00A1	2 bytes	PIIX3 - Interrupt Controller 2
00B2	1 byte	APM control port
00B3	1 byte	APM status port
00C0 - 00DE	31 bytes	PIIX3 - DMA 2
00F0	1 byte	Reset Numeric Error
0170 - 0177	8 bytes	Secondary IDE Channel
01F0 - 01F7	8 bytes	Primary IDE Channel
0201	1 byte	Gameport Joystick
0220 - 022F	16 bytes	Audio - Yamaha Sound System Base
0270 - 0273	4 bytes	I/O read port for Plug and Play
0278 - 027B	4 bytes	Parallel Port 2
02E8 - 02EF	8 bytes	Serial Port 4
02F8 - 02FF	8 bytes	On-Board Serial Port 2
0330 - 0331	2 bytes	Audio - MPU-4
0376	1 byte	Sec IDE Cahn Card Port
0377	1 byte	Sec IDE Chan Stat Port
0378 - 037B	8 bytes	Parallel Port 1
0388 - 038B	4 bytes	Audio FM synthesis
03B0 - 03BB	4 bytes	ATI mach64 GT
03BC - 03BF	4 bytes	Parallel Port 3
03C0 - o3DF	16 bytes	ATI mach64 GT
03E8 - 03EF	8 bytes	Serial Port 3
03F0 - 03F5	6 bytes	Floppy Channel 1
03F6	1 byte	Pri IDE Chan Cmd Port
03F7 (Wrtie)	1 byte	Floppy Chan 1 Cmd
03F7, bit 7	1 bit	Floppy Dsk Chg Chan 1
03F7, bits 6:0	7 bits	Pri IDE Chan Status Port
03F8 - 03FF	8 bytes	On-Board Serial Port 1
04D0 - 04D1	2 bytes	Edge/level triggered
LPT + 400h	8 bytes	ECP port, LPT + 400H
0530 - 0537	8 bytes	Audio - Yamaha Sound System
0CF8 - OCFB*	4 bytes	PCI Config Addres Reg
0CF9	1 byte	Turbo & Reset Control Reg.
0CFC - 0CFF*	4 bytes	PCI Config Data Reg
FF00 - FF07	8 bytes	IDE Bus Master Reg.
FF40 - FF5F	32 bytes	USB
FFA0 - FFA7	8 bytes	Primary Bus Master IDE Registers
FFA8 - FFAF	8 bytes	Secondary Bus Master IDE Registers

2.3 PCI Configuration Space Map

PCI Configuration Space Map

Bus Number (hex)	Dev Number (hex)	Function Number (hex)	Description
00	00	00	Intel 82430HX (TVX)
00	07	00	Intel 82371SB (PIIX3) PCI/ISA bridge
00	07	01	Intel 82371SB (PIIX3) IDE Bus Master
00	07	02	Intel 82371SB (PIIX3) USB
00	0D	00	PCI Expansion Slot: J4E2
00	0E	00	PCI Expansion Slot: J4E1
00	0F	00	PCI Expansion Slot: J4D1
00	10	00	PCI Expansion Slot: J4C1

3 Motherboard BIOS and Setup Utility

3.1 Introduction

The motherboard uses an Intel BIOS, which is stored in Flash EEPROM and which can be upgraded using a floppy disk-based program. In addition to the Intel BIOS, the Flash EEPROM also contains the Setup utility, Power-On Self Test (POST). APM 1.2, the PCI auto configuration utility, and Windows 95-ready Plug and Play 1 .0A. This motherboard also supports system BIOS shadowing, allowing the BIOS to execute from 64-bit on-board write-protected DRAM.

Hardware has been added to the board to insure that only Intel compiled BIOS can be programmed into the Flash EEPROM. This secure flash provides extended virus protection and security.

The BIOS displays a sign-on message during POST that identifies the type of BIOS and a five digit BIOS revision code.

3.2 BIOS Upgrades

Flash memory makes distributing BIOS upgrades easy. A new version of the BIOS can be installed from a diskette. BIOS upgrades are available to be downloaded from the secure section on the Intel bulletin board, or from Intel's FTP site.

The disk-based Flash upgrade utility, FMUP.EXE, has three options for BIOS upgrades:

- The Flash BIOS can be updated from a file on a disk;
- The current BIOS code can be copied from the Flash EEPROM to a disk file as a backup in the event that an upgrade cannot be successfully completed; or
- The BIOS in the Flash device can be compared with a file to ensure the system has the correct version.

The upgrade utility ensures that the upgrade BIOS matches the target system to prevent accidentally installing a BIOS for a different type of system.

3.3 PCI IDE Support

If the user selects the auto configuration option in the Setup utility, the BIOS automatically sets up the two local bus IDE connectors with independent I/O channel support. The IDE interface supports PIO Mode 3, and Mode 4 hard drives and recognition of ATAPI CD-ROMs, tape drives, and any other ATAPI devices. The BIOS determines the capabilities of each drive and configures them to optimize capacity and performance. For the high capacity hard drives typically available today, the BIOS automatically configures the drive for Logical Block Addressing (LBA). The drive is configured for maximum capacity and to PIO Mode 3 or 4, depending on the capability of the drive. The user can override the auto-configuration options by using the manual mode setting. The ATAPI Specification Revision 2.5 recommends that an ATAPI device be configured as shown in the table below.

Table 7. Recommendations for Configuring an ATAPI Device

Primary Cable		Secondary Cable		
Drive 0	Drive 1	Drive 0	Drive 1	
ATA				Normal, not ATAPI
ATA		ATAPI		Disk and CD-ROM for enhanced IDE systems
ATA		ATAPI	ATAPI	Enhanced IDE with CD-ROM and a tape or two CD-ROMs
ATAPI				ATAPI CD-ROM as only IDE device in the system

3.4 PCI Auto Configuration

The PCI auto configutation utility operates in conjunction with the system Setup utility to allow the insertion and removal of PCI cards to the system without user intervention (Plug and Play). When the system is turned on after adding a PCI add-in card, the BIOS automatically configures interrupts, I/0 space, and other parameters. PCI interrupts are distributed to available ISA interrupts that have been not been assigned to an ISA card, or system resources. Interrupts that remain set to available in the BIOS Setup will be considered free for PCI add-in card use. It is nondeterministic as to which PCI interrupt will be assigned to which ISA IRQ.

The PCI auto configuration function complies with version 2.10 of the PCI BIOS specification. System configuration information is stored in ESCD format. The ESCD data may be cleared by setting the CMOS clear jumper to the ON position.

PCI specification 2.1 for add-in card auto configuration is also a part of the Plug and Play BIOS. Peer-to-peer hierarchical PCI Bridge 1.0 is supported, and by using an OEM supplied option ROM or TSR, a PCI-to-PCMCIA bridge capability is possible as well.

3.5 ISA Plug and Play

The BIOS incorporates ISA Plug and Play capabilities and delivers the Plug and Play Release 1.0A (Plug and Play BIOS V., 1.0A, ESCD V. 1.03). When used in conjunction with the ISA Configuration Utility (ICU) for DOS or Windows 3.x, the BIOS automatically configures ISA Plug and Play cards and PCI cards. The BIOS also manages the resources for ISA legacy cards. Because the BIOS supports configuring devices across PCI bridges, release 1.41 or greater of the ICU must be used with the motherboard to properly view and change system settings. System configuration information is stored in ESCD format. You can clear the ESCD data by setting the CMOS clear jumper to the ON position.

The BIOS provides a Setup option to support the Windows 95 run time Plug and Play utilities. When you select this option. the BIOS only assigns resources to devices that are critical to booting. Device node information is avilable for all devices to ensure compatibility with Windows 95.

Copies of the Plug and Play specification may be obtained from the Intel BBS, or from CompuServe by typing Go PlugPlay.

3.6 Advanced Power Management

The BIOS supports Advanced Power Management (APM) version 1.2. The energy saving mode (also called sleep or stand-by mode) can be activated by using an optional sleep resume button, by pressing a user-defined hot key sequence, or by prolonged system inactivity.

When in sleep mode, the motherboard reduces power consumption by utilizing the Pentium processor's System Management Mode (SMM), by spinning down hard drives, and turning off VESA DPMS-compliant monitors. You can use the BIOS Setup utility to select which DPMS mode (stand by, suspend, or off) to send to the monitor. While in sleep mode, the computer can respond to and service an external interrupt (such as an in-coming FAX). Any keyboard or mouse activity brings the system out of the energy saving mode. When this occurs, the monitor and IDE drives are turned back on immediately.

The BIOS enables APM by default. However, the system must be configured with an APM driver in order for the system power saving features to take effect. Windows 95 enables APM automaticallly when it detects the presence of the APM BIOS.

3.7 Boot Options

Booting from CD-ROM is supported in adherence to the "El Torito" bootable CD-ROM format specification developed by Phoenix Technologies and IBM. Under the Boot Options field in Setup, CD-ROM is one of four possible boot devices which are defined in priority order. The default setting is for floppy to be the primary boot device and hard drive to be the secondary boot device. If CD-ROM is selected, it must be the first device. The third and fourth devices are set to disabled in the default configuration. The user can add also select network as a boot device. The network option allows booting from a network add-in card with a remote boot ROM installed.

✏ NOTE

A copy of "El Torito" is available on Phoenix Web page (http://www.ptltd.com/techs/specs.html)

3.8 Setup Enable Jumper

A motherboard configuration jumper controls access to the BIOS Setup. When you set this jumper to the disable position, you cannot access the Setup utility. When this jumper is set to disable, the computer will also not display the message prompting the user to press <F1> to enter Setup.

3.9 BIOS Setup Program

The ROM-based Setup utility allows the configuration to be modified without opening the computer for most basic changes. You can access the Setup utility by pressing the <F1> key after the memory test has begun and before the boot begins. A prompt may be enabled that informs users to press the <F1> key to access Setup.

3.9.1 Overview of the Setup Menu Screens

The Setup utility initially displays the Main menu screen. In each screen there are options for modifying the system configuration. Select a menu screen by pressing the left <←> or right <→> arrow keys. Use the up <↑> or down <↓> arrow keys to select items in a screen. Use the <Enter> key to select an item for modification. For certain items, pressing <Enter> will bring up a subscreen. After you have selected an item, use the arrow keys to modify the setting.

Table 8. Overview of the Setup Menu Screens

Setup Menu Screen	Description
Main	For setting up and modifying some of the basic options of a PC, such as time, date, floppy drives, hard drives.
Advanced	For modifying the more advanced features of a PC, such as peripheral configuration and advanced chipset configuration.
Security	For specifying passwords that can be used to limit access to the system.
Exit	For saving and discarding changes.
Setup Subscreen	**Description**
Floppy Options	For configuring your floppy drives.
IDE Device Configuration	For configuring your IDE devices.
Boot Options	For modifying options that affect the system boot up, such as the boot sequence.
Peripheral Configuration	For modifying options that affect the serial port, the parallel port, and the disk drive interfaces.
Audio Configuration	For accessing and modifying audio configuration options.
Advanced Chipset Configuration	For modifying options that affect memory as system busses.
Power Management Configuration	For accessing and modifying Advanced Power Management (APM) options
Plug and Play Configuration	For modifying options that affect system's Plug and Play capabilities.

3.9.2 Main CMOS Setup Screen

This section describes the Setup options found on the main menu screen. If you select certain options from the main screen (e.g., Hard Disk), the Setup utility switches to a subscreen for the selected option.

3.9.2.1 System Date

Specifies the current date. Select the month from a pop-up menu.

3.9.2.2 System Time

Specifies the current time.

3.9.2.3 Floppy Options

When selected, this displays the Floppy Options menu.

3.9.2.4 Primary IDE Master

Reports if an IDE device is connected to the system. When selected, this brings up the IDE Device Configuration subscreen.

3.9.2.5 Primary IDE Slave

Reports if an IDE device is connected to the system. When selected, this brings up the IDE Device Configuration subscreen.

3.9.2.6 Secondary IDE Master

Reports if an IDE device is connected to the system. When selected, this brings up the IDE Device Configuration subscreen.

3.9.2.7 Secondary IDE Slave

Reports if an IDE device is connected to the system. When selected, this brings up the IDE Device Configuration subscreen.

3.9.2.8 Language

Specifies the language of the text strings used in the Setup utility and the BIOS. The options are any installed languages.

3.9.2.9 Boot Options

When selected, this brings up the Boot Options subscreen.

3.9.2.10 Video Mode

Reports the video mode. There are no options.

3.9.2.11 Mouse

Reports if a mouse is installed or not. There are no options.

3.9.2.12 Base Memory

Reports the amount of base memory. There are no options.

3.9.2.13 Extended Memory

Reports the amount of extended memory. There are no options.

3.9.3 Floppy Options Subscreen

3.9.3.1 Floppy A:

Reports if a floppy drive is connected to the system. There are no options.

3.9.3.2 Floppy B:

Reports if a second floppy drive is connected to the system. There are no options.

3.9.3.3 Floppy A: Type

Specifies the physical size and capacity of the floppy drive. The options are Disabled, 360 KB, 5.25-inch; 1.2MB., 5.25-inch; 720 KB. 3.5-inch; 1.44/1.25 MB., 3.5-inch, 2.88 MB, 3.5-inch. The default is 1 .44/1.25 MB., 3.5-inch.

3.9.3.4 Floppy B: Type

Specifies the physical size and capacity of the floppy drive. The options are Disabled, 360 KB, 5.25-inch; 1.2MB, 5.25-inch; 720 KB, 3.5-inch; 1.44/1.25MB. 3.5-inch; 2.88MB, 3.5-inch. The default is Disabled.

3.9.3.5 Floppy Access

Specifies read/write access for all attached floppy drives. The options are Read/Write and Read Only. The default is Read/Write.

3.9.4 IDE Device Configuration Subscreen

3.9.4.1 IDE Device Configuration

Used to manually configure the hard drive or have the system auto configure it. The options are Auto Configured, User Definable and Disabled. The default is Auto Configured. If you select User Definable then the Number of Cylinders, Number of Heads, and Number of Sectors items can be modified.

3.9.4.2 Number of Cylinders

If IDE Device Configuration is set to User Definable, you must type the correct number of cylinders for your hard disk. If Hard Disk Type is set to Auto Configured, this reports the number of cylinders for your hard disk and cannot be modified.

3.9.4.3 Number of Heads

If IDE Device Configuration is set to User Definable, you must type the correct number of heads for your hard disk. If Hard Disk Type is set to Auto Configured, this reports the number of heads for your hard disk and cannot be modified.

3.9.4.4 Number of Sectors

If IDE Device Configuration is set to User Definable, you must type the correct number of sectors for your hard disk. If Hard Disk Type is set to Auto Configured, this reports the number of sectors for your hard disk and cannot be modified.

3.9.4.5 Maximum Capacity

Reports the maximum capacity of your IDE Device. It is calculated from the number of cylinders, heads, and sectors. There are no options.

3.9.4.6 IDE Translation Mode

Specifies the IDE translation mode. The options are Standard CHS (standard cylinder head sector - less than 1024 cylinders). Logical Block, Extended CHS (extended cylinder head sector - greater than 1024 cylinders) and Auto Detected (BIOS detects IDE drive support for LBA). The default is Auto Detected.

✳ CAUTION

Do not change this from the option selected when the hard drive was formatted. Changing the option can result in corrupted data.

3.9.4.7 Multiple Sector Setting

Sets the number of sectors transferred by an IDE drive per interrupt generated. The options are Disabled, 4 Sectors/Block, 8 Sectors/Block, or Auto Detected. The default is Auto Detected. Check the specifications for your hard disk drive to determine which setting provides optimum performance for your drive.

3.9.4.8 Fast Programmed I/O Modes

Sets how fast transfers on the IDE interface occur. The options are Disabled or Auto Detected. The default is Auto Detected.

3.9.5 Boot Options Subscreen

This section describes the options available on the Boot Options subscreen.

3.9.5.1 First, Second, Third, Fourth Boot Device

Sets which drives the system checks to find an operating system to boot from. The following options are available:

First Boot Device: Select Disabled, Floppy, Hard Disk, CD-ROM. Network.

Second. Third, Fourth Device: Select Disabled, Floppy, Hard Disk, Network.

3.9.5.2 System Cache

Enables or disables both the primary and the secondary cache memory. The options are Enabled or Disabled. The default is Enabled.

3.9.5.3 Boot Speed

Sets the system's boot speed. The options are Deturbo and Turbo. The default is Turbo. If Turbo is selected, boot-up occurs at full speed. If Deturbo is selected, the board operates at a slower speed.

3.9.5.4 Num Lock

Sets the beginning state of the Num Lock feature on your keyboard. The options are On and Off. By default the Num Lock feature is turned off.

3.9.5.5 Setup Prompt

Turns on (or off) the "Press <F1> key if you want to run Setup" prompt during the power-up sequence. The options are Enabled and Disabled. The default is Enabled.

✏ NOTE

This option has no effect on your ability to access the Setup utility. It only toggles the prompt.

3.9.5.6 Typematic Rate Programming

Sets the typematic rates. The options are Default and Override. The default is Default, which disables the Typematic Rate Delay and Typematic Rate options. Choosing Override enables the Typematic Rate Delay and Typematic Rate options.

3.9.5.7 Typematic Rate Delay

Sets how long it takes for the key-repeat function to start when you hold down a key on the keyboard. The options are 250, 500, 750, and 1000 millisecond delays. The default is 250. If Typematic Rate programming is set to Default, this option is not visible.

3.9.5.8 Typematic Rate

Sets the speed at which characters repeat when you hold down a key on the keyboard. The higher the number, the faster the characters repeat. The options are 6, 8, 10, 12, 15, 20, 24, and 30 characters per second. The default is 6. If Typematic Rate programming is set to Default, this option is not visible.

3.9.6 Advanced Screen

This section describes the Setup options found on the Advanced menu screen. If you select certain options from the Advanced screen (e.g., Peripheral Configuration), the Setup utility switches to a subscreen for the selected option. Subscreens are described in the sections following the description of the Advanced screen options.

3.9.6.1 Processor Type

Reports the processor type. There are no options.

3.9.6.2 Processor Speed

Reports the processor clock speed. There are no options.

3.9.6.3 Cache Size

Reports the size of the secondary cache. There are no options. If your system contains no L2 cache, this item will not appear.

3.9.6.4 Peripheral Configuration

When selected, this displays the Peripheral Configuration subscreen.

3.9.6.5 Audio Configuration

When selected, this displays the Audio Configuration subscreen.

3.9.6.6 Advanced Chipset Configuration

When selected, this brings up the Advanced Configuration subscreen.

3.9.6.7 Power Management Configuration

When selected and enabled, this brings up the Advanced Power Management subscreen.

3.9.6.8 Plug and Play Configuration

When selected, this brings up the Plug and Play Configuration subscreen.

3.9.7 Peripheral Configuration Subscreen

This section describes the screens for the peripheral configuration subscreen.

3.9.7.1 Configuration Mode

Enables you to choose between setting the peripheral configuration yourself, or having the system do it. The options are Auto and Manual. The default is Auto.

When Auto is selected, the system peripherals are automatically configured during power up. The options below for PCI IDE Interface, Floppy Interface, Serial Port 1 and Serial Port 2 Addresses, Serial Port 2 IR Mode, and the Parallel Port Address cannot be modified. The settings displayed for those options reflect the current state of the hardware.

3.9.7.2 PCI IDE Interface

Enables or disables the PCI IDE hard disk interface. The options are Enabled and Disabled. The default is Enabled. (If Configuration Mode is set to Auto, this option cannot be modified.)

3.9.7.3 Floppy Interface

Enables or disables the floppy drive interface. The options are Enabled and Disabled. The default is Enabled (If Configuration Mode is set to Auto, this option cannot be modified.)

3.9.7.4 Serial Port 1 Address

Selects the address of serial port 1. The options are Disabled; COM 1, 3F8h; COM2, 2F8h; COM3, 3E8h; and COM4, 2E8h. The default is COM1, 3F8h. If the Configuration Mode is set to Auto, the Setup utility assigns the first free COM port (normally COM1, 3F8h) as the serial port 1 address, regardless of what is selected under the Serial Port 1 Address option. (If Configuration Mode is set to Auto, this option cannot be modified.)

3.9.7.5 Serial Port 2 Address

Selects the address of serial port 2. The options are Disabled, COM1, 3F8h; COM2, 2F8h; COM3, 3E8h; and COM4. 2E8h. The default is COM2. 2F8h. If the Configuration Mode is set to Auto, the Setup utility assigns the first free COM port (normally COM2, 2F8h) as the serial port 2 address, regardless of what is selected under the Serial Port 2 Address option. (If Configuration Mode is set to Auto, this option cannot be modified.)

✏ NOTE

If either serial port address is set, the address it is set to does not appear in the options dialog box of the other serial port. If an ATI mach32 or an ATI mach64 video controller is active, the COM4. 2E8h address will not appear in the options dialog box of either serial port.

3.9.7.6 Serial Port 2 IR Mode

Makes Serial Port 2 available to infrared applications. The options are Enabled and Disabled. The default is Disabled. (If Configuration Mode is set to Auto, this option cannot be modified.)

3.9.7.7 Parallel Port Address

Selects the address and IRQ of the parallel port. The options are Disabled; LPT1, 3BCh, IRQ7; LPT1, 378h, IRQ7; LPT1, 378h, IRQ5; and LPT2, 278h, IRQ5. The default is LPT1, 378h, IRQ7.If the Configuration Mode is set to Auto, the Setup utility assigns LPT1, 378h, IRQ7 as the parallel port address, regardless of what is selected under the Parallel Port Address option. (If Configuration Mode is set to Auto, this option cannot be modified.)

3.9.7.8 Parallel Port Mode

Selects the mode for the parallel port. The options are Compatible, Bi-directional, EPP, and ECP. The default is Compatible. Compatible means the parallel port operates in AT-compatible mode. Bidirectional means the parallel port operates in bi-directional PS/2 compatible mode. EPP and ECP mean the parallel port operates high-speed, bi-directionally. This option is not affected by the Configuration Mode field above.

3.9.8 Audio Configuration Subscreen

This section describes the options available on the Audio Configuration subscreen.

3.9.8.1 Audio Configuration Mode

Sets the configuration mode for the audio subscreen. The options are Disabled, Manual and Auto. The default is 640 KB. When set to Auto, the only features that are accessible are the Game Port configuration and the SRS enabled/disable. All the fields are viewable fields only. By setting the audio configuration mode to Manual the audio configurations may be independently changed.

3.9.8.2 SB Port Base

Sets the base I/O address configuration for the Sound Blaster Compatible audio subsection. The options are Disabled, 220h and 240h. The default is 240h

3.9.8.3 WSS Port Base

Sets the base I/O address configuration for the Windows Sound System Compatible audio subsection. The options are Disabled, 530h, E8Oh, F40h and 604h. The default is 530h.

3.9.8.4 MPU Port Base

Sets the base I/O address configuration for the MPU-401 Compatible audio subsection. The options are Disabled, 330h, 332h, 334h and 300h. The default is 330h.

3.9.8.5 WSS Port Interrupt

Sets the IRQ configuration for the Windows Sound System Compatible audio subsection. The options are Disabled, IRQ7, IRQ8 and IRQ11. The default is IRQ11.

3.9.8.6 SB/MPU Interrupt

Sets the IRQ configuration for the Sound Blaster and MPU-401 Compatible audio subsections. The options are Disabled, IRQ5, IRQ7, IRQ9 and IRQ10. The default is IRQ5.

3.9.8.7 WSS Play DMA

Sets the DMA configuration for the Windows Sound System Compatible audio subsection. The options are Disabled and Channel 0. The default is Channel 0.

3.9.8.8 SB Play/WSS Capture DMA

Sets the DMA configuration for the Sound Blaster and MPU-401 Compatible audio subsections. The options are Disabled and Channel 1. The default is Channel 1.

3.9.8.9 Game Port

Sets the base I/O address configuration for the Game Port audio subsection. The options are Disabled, Enabled and Auto. The default is Auto.

3.9.8.10 Game Port Status

Displays the base I/O address configuration for the Game Port audio subsection. This field may be viewed but not altered.

3.9.8.11 FM Synthesizer Port Status

Displays the base I/O address configuration for the FM Synthesizer Port audio subsection. This field may be viewed but not altered.

3.9.8.12 SRS Mode

Sets the configuration mode for the SRS audio subsection. The options are Enabled and Disabled. The default is Enabled. If the Audio Configuration Mode is set to Disabled. SRS is also Disabled.

3.9.9 Advanced Chipset Configuration Subscreen

This section describes the options available on the Advanced Chipset Configuration Subscreen.

3.9.9.1 Base Memory Size

Sets the size of the base memory. The options are 512 KB and 640 KB. The default is 640 KB.

3.9.9.2 ISA LFB Size

Sets the size of the linear frame buffer. The options are Disabled 1MB, 2MB and 4MB. The default is Disabled. If this is set to 1 MB, 2 MB or 4MB, then the ISA LFB Base Address field is displayed.

3.9.9.3 ISA LFB Base Address

Reports the base address of the LFB. There are no options. This field will not appear if the ISA LFB size is set to Disabled. If the ISA LFB size is set to 1 MB, 2 MB or 4MB, the field displays the base address to be 15 MB, 14 MB, or 12 MB respectively.

3.9.9.4 Video Palette Snoop

Controls the ability of a primary PCI graphics controller to share a common palette with an add-in video card. The options are Enabled and Disabled. The default is Disabled.

3.9.9.5 Latency Timer (PCI Clocks)

Sets the length of time an agent on the PCI bus can hold the bus when another agent has requested the bus. Valid numbers are between 0 and 256. The default is 66.

3.9.10 Power Management Configuration Subscreen

This section describes the options available on the Power Management Subscreen.

3.9.10.1 Advanced Power Management

Enables or disables the Advanced Power Management (APM) support in your system's BIOS. The options are Enabled and Disabled. The default is Enabled. Power Management will only work with APM-capable operating systems to manage power consumption in your system. If Advanced Power Management is set to Disabled, none of the fields in the Advanced Power Management subscreen are displayed.

3.9.10.2 IDE Drive Power Down

Sets any IDE drives to spin down when the system goes into power managed mode. The options are Enabled and Disabled. The default is Enabled.

3.9.10.3 Inactivity Timer

Sets how long the system must be inactive before it enters power managed mode. Enter number of minutes. The range is 0 to 255 minutes. The default is 10 minutes.

3.9.10.4 VESA Video Power Down

Sets the command issued to your graphics card when the system goes into power managed mode. The options are Disabled, Standby, Suspend, and Sleep. The default is Sleep.

3.9.10.5 HotKey

Sets the hot key that, when pressed while holding down the <Ctr1> and <Alts keys, causes the system to enter power managed mode. All alphabetic keys are valid.

3.9.11 Plug and Play Configuration Subscreen

This section describes the options found on the Plug and Play configuration subscreen.

3.12.11.1 Configuration Mode

Sets how the BIOS gets information about ISA cards that do not have Plug and Play capabilities. The options are Use Setup Utility and Use ICU (ISA Configuration Utility). The default is Use Setup Utility.

If Use ICU is selected, the BIOS will depend on run-time software to ensure that there are no conflicts between ISA boards with Plug and Play capabilities and those without. Only Boot With PnP OS will be visible.

3.9.11.2 Use PnP OS

Enables the PC to boot with an operating system capable of managing Plug and Play add-in cards. The options are None, Other, and Windows 95. The default is Windows 95.

3.9.11.3 ISA Shared Memory Size

Enables you to "unshadow" a block of the upper memory area. The options are Disabled, 16 KB, 32 KB, 48 KB, 64 KB, 80 KB and 96 KB. The default is Disabled. If this is set to Disabled, the ISA Shared Memory Base Address option (described below) is not displayed.

Shadowing is a technique that copies a block of memory for an add-in card's ROM to the same address in system memory. This provides faster access and achieves the higher performance. By default, all upper memory is shadowed.

3.9.11.4 ISA Shared Memory Base Address

Set the base address or the ISA Shared Memory. The options are C8000h, CC000h. D0000h, D4000Oh, D8000h and DC000h. This setting could affect the ISA Shared Memory Size item. The value entered in the ISA Shared Memory Size item cannot extend to the E0000h address. For example, if a size of 64K was selected, options D4000h. D8000, and DC000h are not available.

3.9.11.5 IRQ 3, 4, 5, 7, 9, 10, 11, 12, 14, 15

Sets the status of the IRQ. The Options are Available and Used By ISA Card. The default is Available. The PCI auto configuration code looks here to see if these interrupts are available for use by a PCI add-in board. If an interrupt is available, the PCI auto configuration code can assign the interrupt to be used by the system. If your system contains an ISA agent that uses one of these interrupts, select Used By ISA Card for that interrupt.

✏ NOTE

IRQ 3, 4, 5 and 7 may not be available in this option, depending on the setting chosen for the COM1, COM2 and parallel ports in the Peripheral Configuration Subscreen.

IRQ 14 and 15 will not show up as user available. If the On-board IDE controller is not used, these interrupts will be available to ISA cards. These interrupts can not be used for PCI cards.

3.9.12 Security Screen

This section describes the two access modes that can be set using the options found on the Security screen, and then describes the Security Screen options themselves.

3.9.12.1 Administrative and User Access Modes

The options on the Security Screen menu make it possible to restrict access to the Setup utility by enabling you to set passwords for two different access modes: Administrative mode and User mode.

In general, Administrative mode has full access to the Setup options, whereas User mode has restricted access to the options. Thus, by setting separate Administrative and User passwords, a system administrator can limit who can change critical Setup values. The actual limitations depend on whether either the Administrative or User passwords or both are Set. (See the table below for a description of how the passwords actually work together.)

To limit access to who can boot the system, set the User password. This is the password that the system asks for before booting. If only the Administrative password is set, the system boots up without asking for a password. If both passwords are set, you can enter either password to boot the system.

The following table shows the effects of setting the Administrative and User passwords. (The table is for reference only, and is not shown on the Security screen) In the table, the statement Can change a limited number of options means you change the system date and time, the power management hot key, the User password, the security hot key, and can enable or disable the unattended start.

Table 9. Administrative and User password Functions

Password Set	Administrative mode can...	User mode can...	Password Required During Boot process
Neither	Change all options*	Change all options*	None
Administrative only	Change all options	Change a limited number of options	None
User only	N/A	Change all options	User
Both	Change all options	Change a limited number of options	Administrative or User

* If no password is set, any user can change all Setup options.

3.9.13 Security Screen Options

3.9.13.1 User password Is

Reports if there is a User password set. There are no options.

3.9.13.2 Administrative Password Is

Reports if there is an Administrative password Set. There are no options.

3.9.13.3 Set User Password

Sets the User password. The Password can be up to seven alphanumeric characters.

3.9.13.4 Set Administrative Password

Sets the Administrative password. The password can be up to seven alphanumeric characters.

3.9.13.5 Unattended Start

Controls when the security password is requested. The options are Enabled and Disabled. The default is Disabled. The User password must be enabled before you can enable this option. If Enabled is selected, the system boots, but the keyboard will be locked until the User Password is entered.

3.9.13.6 Security Hot Key (CTRL-ALT-)

Sets a hot key that, when pressed, locks the keyboard until the User Password is entered. The Keyboard LEDs flash to indicate that he keyboard is locked. When you enter the User password, you do not have to press the <Enter> key.

3.9.14 Exit Screen

This section describes the different ways to exit and save or not save changes made in the Setup utility.

3.9.14.1 Exit Saving Changes

Saves the changes to CMOS RAM and exits the Setup utility. You can also press the <F10> key anywhere in the Setup utility to do this.

3.9.14.2 Exit Discarding Changes

Exits the Setup utility without saving any changes. This means that any changes made in the Setup utility are discarded and are not saved. Pressing the <Esc> key in any of the four main screens accomplishes this.

3.9.14.3 Load Setup Defaults

Resets all of the Setup options to their defaults. You can also press the <F5> key anywhere in the Setup utility to do this.

This selection loads the default Setup values from the ROM table.

3.9.14.4 Discard Changes

Discards any changes you made during the current Setup session without exiting the utility. You can also press the <F6> key anywhere in the Setup utility to do this.

This selection loads the CMOS RAM values that were present when the system was turned on.

4 Error Messages and Beep Codes

4.1 BIOS Beep Codes

BIOS Beep Codes

Beeps	Error Message	Description
1	Refresh Failure	The memory refresh circuitry on the motherboard is faulty.
2	Parity Error	Parity is not supported on this product, will not occur.
3	Base 64 KB Memory Failure	Memory failure in the first 64 KB.
4	Timer Not Operational	Memory failure in the first 64 KB of memory, or Timer 1 on the motherboard is not functioning.
5	Processor Error	The processor on the motherboard generates an error.
6	8042-Gate A20 Failure	The keyboard controller (8042 may be bad. The BIOS cannot switch to protect mode.)
7	Processor Exception Interrupt Error	The processor generated an exception interrupt.
8	Display Memory Read/Write Error	The system sides adapter is either missing or its memory is faulty. This is not a fatal error.
9	ROM Checksum Error	ROM checksum value does not match the value encoded in BIOS.
10	CMOS Shutdown Register Rd/Wrt Error	The shutdown register for CMOS RAM failed.

4.2 PCI Configuration Error Messages

The following PCI messages are displayed as a group with bus, device and function information.

<'NVRAM Checksum Error, NVRAM Cleared'>, \ String
<'System Board Device Resource Conflict'>, \ ; String
<'Primary Output Device Not Found'>, \ ; String
<'Primary Input Device Not Found'>, \ ; String
<'Primary Boot Device Not Found'>, \ ; String
<'NVRAM Cleared By Jumper'>, \ ; String
<'NVRAM Data Invalid, NVRAM Cleared'>, \ ; String
<'Static Device Resource Conflict'>, \ ; String

The following messages changing together to give a message such as:

PCI I/O Port Conflict: Bus: 00, Device OD, Function 1

If and when more than 15 PCI conflict errors are detected the log full message is displayed.

<`PCI I/O Port Conflict:' >,\ ; String
<`PCI Memory Conflict: ' > \ ; String
<'PCI IRQ Conflict: ' >, \ ; String
<' Bus '> , \ ; String
<' ,Device ' > , \ ; String
<' ,Function ' > , \ ; String
<',PCI Error Log is Full.'>, \ ;String
<'Floppy Disk Controller Resource Conflict'>, \; Text
<'Primary IDE Controller Resource Conflict '>, \ ;Text
<'Secondary IDE Controller Resoarse Conflict '>,\; Text
<'Parallel Port Resource Conflict '>,\; Text
<'Serial Port 1 Resource Conflict '>, \; Text
<'Serial Port 2 Resource Conflict '>,\ ;Text

4.3 BIOS Error Messages

BIOS Error Messages

Error Messages	Explanation
8042 Gate - A20 Error	Gate A20 on the keyboard controller (8042) is not working.
Address Line Short!	Error in the address decoding circuitry on the motherboard.
Cache Memory Bad, Do Not Enable Cache!	Cache memory is defective. Replace it.
CH-2 Timer Error	Most AT systems include two timers. There is an error in timer 2.
CMOS Battery State Low	CMOS RAM is powered by a battery. The battery power is low. Replace the battery.
CMOS Checksum Failure	After CMOS RAM values are saved, a checksum value is generated for error checking. The previous value is different from the current value. Run Setup.
CMOS System Options Not Set	The values stored in CMOS RAM are either output or non-consistent. Run Setup.
CMOS Display Type Mismatch	The video type in CMOS RAM does not match the type detected by the BIOS. Run Setup.
CMOS Memory Size Mismatch	The amount of memory on the motherboard is different than amount in CMOS RAM. Run Setup.
CMOS Time and Date Not Set Up	Run the BIOS Setup utility to set the date and time in CMOS RAM
Diskette Bank Failure	The boot disk in floppy drive A: is corrupt. It cannot be used to boot the system. Use another boot disk and follow the screen instructions.
Display Switch Non Proper	The display jumper is not implemented on this product, this error will not occur.
DMA Error	Error in the DMA controller.
DMA #1 Error	Error in the first DMA channel.
DMA #2 Error	Error in the second DMA channel.
FDD Controller Failure	The BIOS cannot communicate with the hard disk drive controller. Check all appropriate connections after the system is powered down.
HDD Controller Failure	The BIOS cannot communicate with the hard disk drive controller. Check all appropriate connections after the system is powered down.
INTR #1 Error	Interrupt channel 1 failed POST.
INTR #2 Error	Interrupt channel 2 failed POST.

BIOS Error Messages (continued)

Error Message	Explanation
Invalid Boot Diskette	The BIOS can read the floppy disk in floppy drive A:, but cannot boot the system. Use another boot disk.
Keyboard is Locked...Unlock it	The Keyboard lock on the system is engaged. The system must be unlocked to conunue.
Keyboard Error	There is a timing problem with the keyboard. Set the Keyboard option in the BIOS Setup utility to Not installed in order to skip the keyboard POST routines.
KB/Interface Error	There is an error in the keyboard connector.
Off Board Parity Error	Parity error in memory installed in an expansion slot. The format is: OFF BOARD PARITY ERROR ADDR (HEX) = (XXXX) XXXX is the hex address where the error occurred.
On Board Parity Error	Parity is not supported on this product, this error will not occur.
Parity Error????	Parity error in system memory at an unknown address.

4.4 ISA NMI Messages

ISA NMI Messages

ISA NMI Messages	Explanation
Memory Parity Error at xxxxx	Memory filled. If the memory location can be determined, it is displayed as xxxxx. If not, the message is Memory Parity Error ????.
I/O Card Parity Error at xxxxx	An add-in card failed. If the address can be determined, it is displayed as xxxxx. If not, the message is I/O Card Parity Error ????.
DMA Bus Time-out	A device has driven the bus signal for more than 7.8 microseconds.

CHAPTER 3
REMOVING A SLOT COVER

Removing a Slot Cover

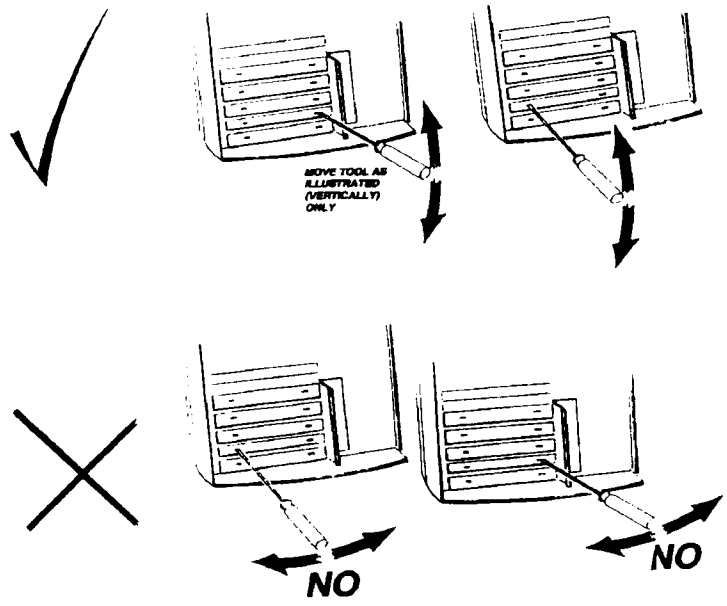
1. From the rear of the system, insert a 3/16-in. screw driver into the RIGHT hole in the slot cover.

2. Gently move the screw driver up and down.

   Repeat until the attachment point above the hole breaks free. (You will feel the metal snap and hear a pop when the attachment points break - this is normal.)

3. Move the screw driver to the LEFT hole in the slot cover. Move the screwdriver down first, then up.

   Repeat until the two remaining attachment points break free.



4. Remove the slot cover when it breaks free.

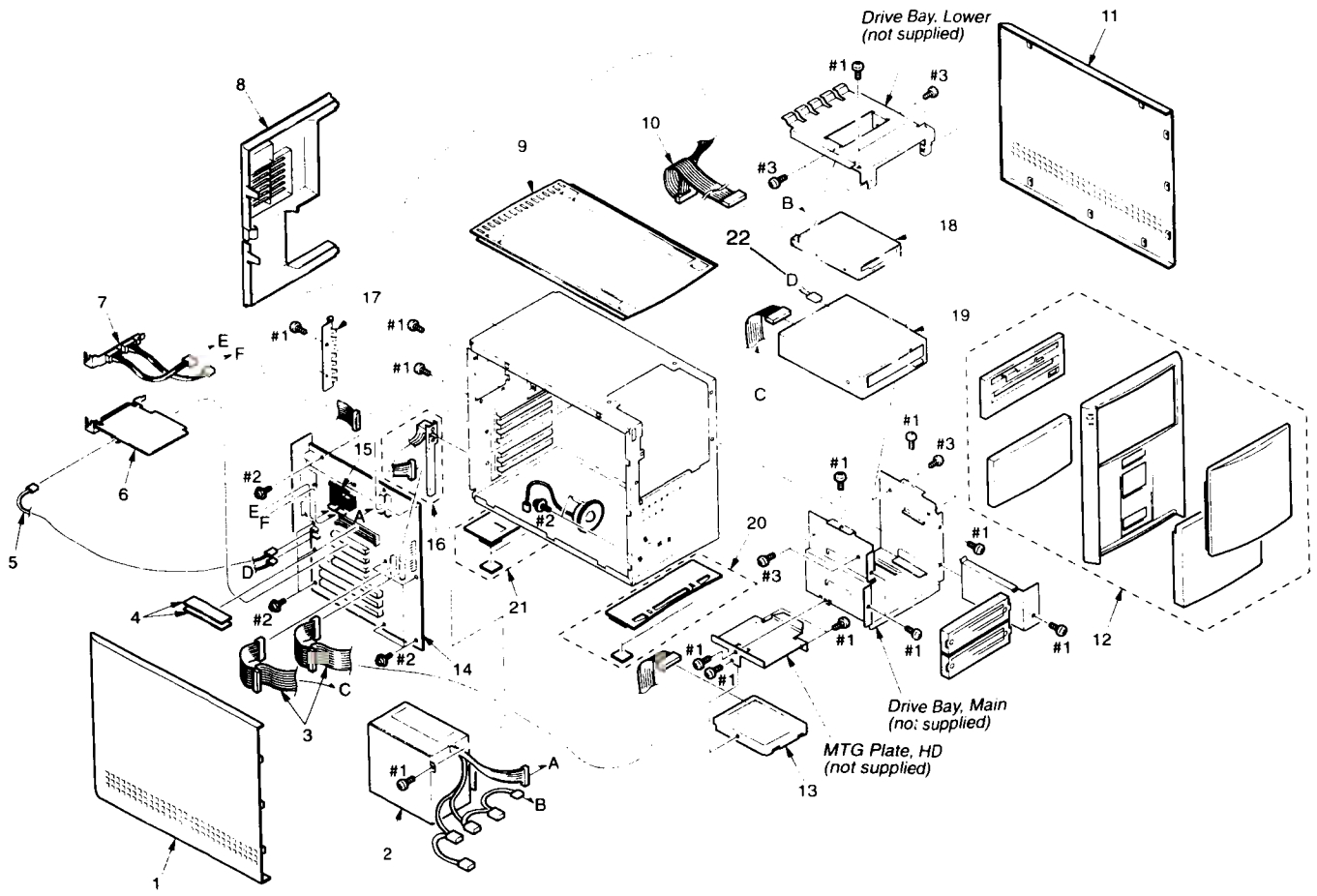
5. Discard the slot cover.

CHAPTER 5
EXPLODED VIEW AND PARTS LIST

NOTE:

- The mechanical parts with no reference number in the exploded views are not supplied.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

The components identified by mark ! or dotted line with mark ! are critical for safety.
Replace only with part number specified.



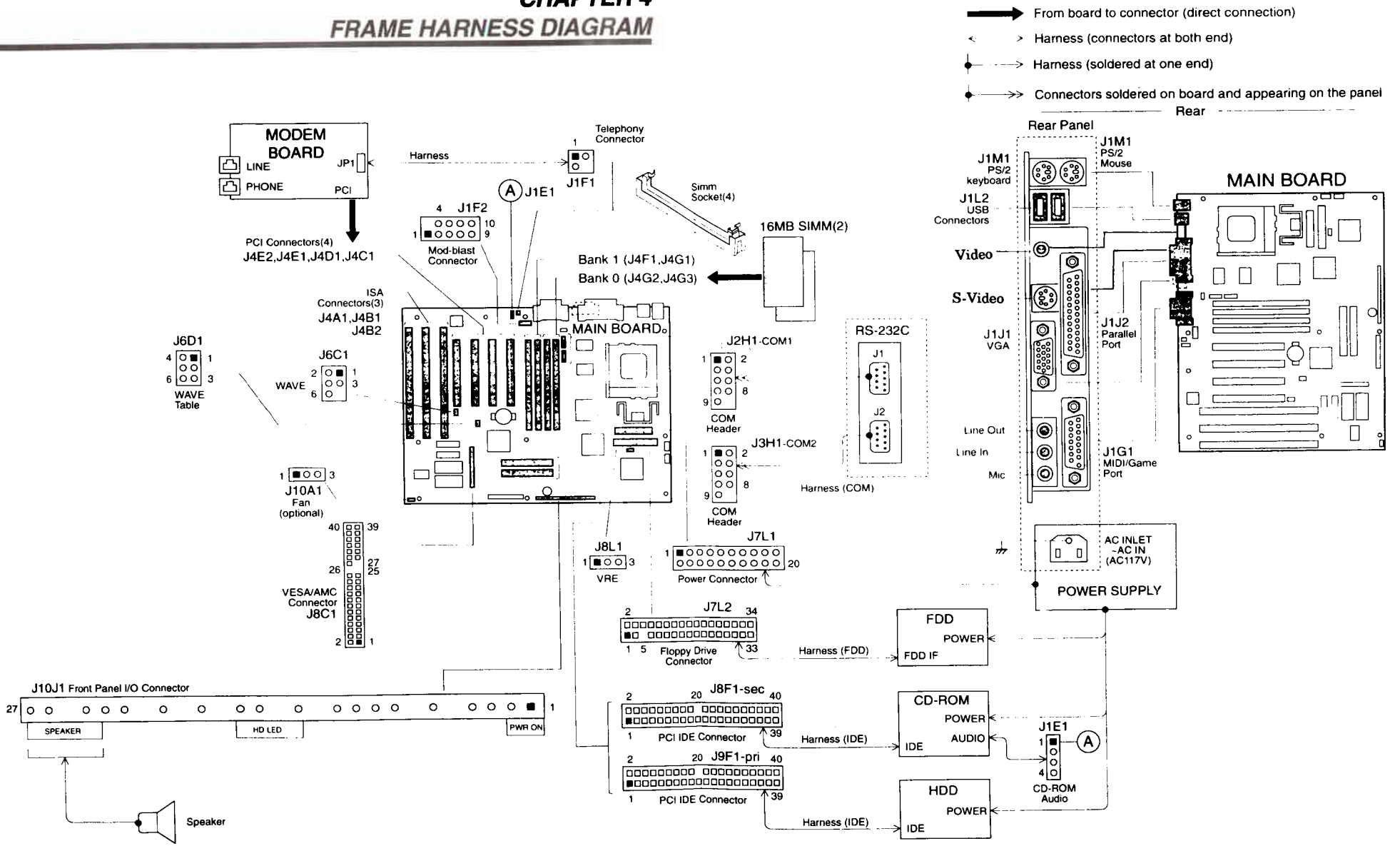
PARTS LIST

REF. NO	PART NO.	DESCRIPTION
*1	X-4621-299-1	SIDE COVER, LEFT, EMI SHIELD
⚠*2	1-468-163-11	POWER UNIT
*3	1-956-816-11	HARNESS (IDE)
*4	1-759-332-11	MEMORY MODULE 16 MB (EDO-nonM)
*5	1-956-818-11	HARNESS (MODEM)
*6	1-589-963-11	BOARD (MODEM)
*7	1-956-819-11	HARNESS (COM)
*8	4-633-529-01	BEZEL, REAR
*9	4-633-528-01	COVER, TOP
*10	1-956-817-11	HARNESS (FDD)
*11	4-633-526-01	COVER, RIGHT
*12	A-8044-148-A	PANEL ASSY
*13	1-759-397-11	HDD (PCV-100)...(2.5GB)
*13	1-759-398-11	HDD (PCV-120)...(3.8GB)
*14	1-589-962-11	BOARD, MAIN
*15	8-759-463-85	(PCV-100)...IC P55C-166
*15	8-759-463-86	(PCV-120)...IC P55C-200
*16	A-8054-142-A	PWR, LED ASSY
*17	4-633-534-01	CARD GUIDE
*18	8-426-409-05	DRIVE, FLOPPY DISK MPF920-E (3-MODE)
*19	1-759-383-11	DRIVE, CD-ROM...CDR8130 AHSO
*20	X-4621-300-1	FEET, PLASTIC, FRONT
*21	X-4621-301-1	FEET, PLASTIC, REAR
*22	1-957-217-11	CD-ROM AUDIO CABLE
*#1	4-634-100-01	SCREW, UNIFIED (NO. 6-32UN[illegible]6)
*#2	4-634-101-01	SCREW, UNIFIED, WITH WASHER (NO. 6-32UNC (W) X6)
#3	7-682-146-01	SCREW, +P M3X5

ACCESSORIES & PACKING MATERIALS

Ref. No	Part #	Description
•	A-801-166-2A	SONY MANUALS, KIT (Includes Next 3 Items)
•	3-859-398-11	USER GUIDE
•	3-859-399-11	ABOUT YOUR SONY PC
•	3-859-619-11	VIDEO PHONE MANUAL
•	1-759-290-11	MOUSE
•	1-759-289-11	KEYBOARD
•	4-633-687-01	PALM REST
•	1-528-174-31	BATTERY, LITHIUM (CR2032)
•	A-801-166-3A	CORD BAG, KIT (Includes Next 4 Items)
•	1-777-802-11	VIDEO CABLE
•	1-782-134-11	S VIDEO CABLE
•	1-956-818-11	MODEM CABLE
•	1-777-786-11	AC POWER CORD

CHAPTER 4
FRAME HARNESS DIAGRAM



VAIO

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